Note: When any ambiguity of interpretation is found in this provisional translation, the Japanese text shall prevail.

2. Cases pertinent to Unity of Invention (Article 37 of the Patent Act)

In order to make clear the examination practice in relation to the unity of invention, the outline of the determination thereon, as well as the measures of the applicant is explained below based on specific examples.

(Points to Note)

- (1) These cases have been prepared with an aim to describe the examination practice. Therefore, it should be noted that modification such as clarification is added to the claims etc. in the above cases to ease explanation.
- (2) In cases 1 to 13 and 31 to 44, assuming that two or more inventions stated in the claims constitute a different invention respectively, and, as a general rule, have novelty and inventive step, only the point whether or not two or more inventions stated in the claims have same or corresponding special technical feature is explained. In cases 14 to 30, decision of subject of the examination is explained.
- (3) This collection of cases includes include cases which fall under multiple types of example of unity of invention simultaneously, but explanation is given focusing attention on any one type of example.

# List of Cases

(With respect to cases 1 to 13 and 31 to 44, "O" represents cases in which inventions have same or corresponding special technical feature. In contrast, " $\times$ " represents cases in which inventions do not have same or corresponding special technical feature.

With respect to cases 14 to 30, "O" represents cases in which inventions claimed in all claims should be examined. In contrast, " $\times$ " represents that the claimed inventions which should not be the subject of the examination are included.)

		Determinatio			
	Case No.	Title of Invention	Remarks		7
Cases related to determination on same or corresponding special technical feature (STF)	Case 1	Anchor for underground tank for reserving liquefied gas and underground tank for reserving liquefied gas	Inventions have same spo feature.	ecial technical	0
	Case 2	A method for dissolving ceramic material and ceramic material core mold	Inventions have same spe feature.	ecial technical	0
	Case 3	Modified cross-section filament, line of thread of filament, and knit fabric	Inventions have same spe feature.	ecial technical	0
	Case 4	Twine used for low friction fiber bearing surface and bearing using the same	Inventions have same spe feature.	ecial technical	0
	Case 5	Quaternary ammonium compounds and use methods thereof	Inventions have same spe feature.	ecial technical	0
	Case 6	A method for the desulfurization of molten pig-iron and a molten pig-iron desulfurization agent	Inventions have same spe feature.	ecial technical	0
	Case 7	Compounds with herbicidal activities	Inventions have same spe feature.	ecial technical	0
	Case 8	Multi-spindle cooling system	Inventions have correspondent technical feature (Technicon common, or closely related to the second common content of the second con	nding cal meaning is ed.)	0
	Case 9	Automatic gas shutoff device	Inventions have correspondent technical feature (Technicon common, or closely related to the second content of	nding cal meaning is ed.)	0
	Case 10	Headlight	Inventions have correspondent technical feature (Technic common, or closely related	nding cal meaning is ed.)	0
	Case 11	Drive belt and pulley	Inventions have correspondent technical feature (Technic common, or closely related	nding cal meaning is ed.)	0
	Case 12	Transmission device and receiving device of image signal	Inventions have correspondent technical feature (Technic common, or closely related	onding cal meaning is ed.)	0
	Case 13	Liquid crystal display	Inventions loose same or corresponding special tec after the fact.	chnical feature	×

Cases related to decision of subject of the examination	Case 14	Floor construction	Decision of subject of the examination	
	Case 15	Sanitary Sewage Treatment Apparatus	Decision of subject of the examination	
	Case 16	Sanitary sewage treatment apparatus	Decision of subject of the examination	×
	Case 17	Coolant and freezer	Decision of subject of the examination	×
	Case 18	Organic electrolyte secondary battery	Decision of subject of the examination	×
	Case 19	Self-closing type sliding door	Decision of subject of the examination	0
	Case 20	Stepladder	Decision of subject of the examination	0
	Case 21	A prism sheet and a planar light source apparatus	Decision of subject of the examination	
	Case 22	Image forming device	Decision of subject of the examination	×
	Case 23	Solar energy collector	Decision of subject of the examination	×
	Case 24	Sucker-type suspension structure	Decision of subject of the examination	×
	Case 25	Broccoli Plant	Decision of subject of the examination	×
	Case 26	Cell differentiation accelerant	Decision of subject of the examination	×
	Case 27	Optical communication device	Decision of subject of the examination	×
	Case 28	Schedule control device	Decision of subject of the examination	×
	Case 29	A learning system	Decision of subject of the examination	0
	Case 30	A receiving terminal and a distribution server	Decision of subject of the examination	0

Cases related to determination on STF when there is particular relationship between claimed inventions	Case 31	Structure of anti-slipping device of blind nut	Product and things used for manufacturing the product	
	Case 32	Ignition trigger pulse generator and magnetizer thereof	Product and things used for manufacturing the product	
	Case 33	Antibiotic A/16686 and microorganisms producing the same	Product and things used for manufacturing the product	0
	Case 34	Keyboard switch and manufacturing method thereof	Product and things used for manufacturing the product	0
	Case 35	Rotary solvent extirpation equipment and process of field assembly of cell assembly of rotor of the same	Product and things used for manufacturing the product	0
	Case 36	Cyclopropane carboxylate derivatives, insecticides containing the same, and methods for killing insects using the same	Product and method of using the product, and product for exclusively using the specific characteristic of the product	
	Case 37	Magnetic card for learning and card type recorder	Product and things used for handling the product	0
	Case 38	Cassette and mechanism inserting/ejecting cassette to/from projector	Product and things used for handling the product	0
	Case 39	Tunnel enlargement excavation method and enlargement shield machine	Method and things directly used for implementation of the method	0
	Case 40	Method for forming heat insulating material and mixing gun to be used in the method	Method and things directly used for implementation of the method	0
	Case 41	System for transmitting/displaying television image signal and transmitting/receiving device of television image signal	Method and things directly used for implementation of the method	
	Case 42	Poly(hexamethylene terephthalate) derivatives	Markush form	×
	Case 43	Compounds having inhibitory activity against tyrosine kinase	Markush form	×
	Case 44	Thiazolo[2,3-b]quinazoline derivatives and intermediates for producing the same	Intermediate and end product	0

[Case 1] Invention having the same Special Technical Feature

## Title of Invention

Anchor for underground tank for reserving liquefied gas and underground tank for reserving liquefied gas

#### What is claimed is:

#### [Claim 1]

An anchor for underground tank for reserving liquefied gas comprising: an anchor principle member (10); and a fixing bracket (11) having a cylindrical sealing member (12) which includes a middle portion of the anchor principle member (10) and holds a flexible bearing plate (16), wherein the fixing bracket (11) holds the anchor principle member (10) through tension via an anchor plate (14) retained on an end portion of the fixing bracket (11). (See, Fig. 1)

## [Claim 2]

An underground tank for reserving liquefied gas, comprising: a base (5) below tank side walls (3); wherein a peripheral portion of the base (5) is formed with horizontal end faces (5a) that come into contact with bottom surfaces (3a) of the side walls (3) and vertical end faces (5b) that come into contact with lower internal surfaces (3b) of the side walls (3); and wherein the anchors (9) according to claim 1 are embedded at intervals within the peripheral portion of the base (5) from lower interior portions of the side walls (3). (See, Fig. 2)

#### Overview of the description and drowings

The invention is for an anchor that is designed to be used for an underground tank for reserving liquefied gas and an underground tank used for reserving liquefied gas thereof.

An underground tank, in which the tank side walls and base are coupled with steel products that extend there between, is a publicly known technology in this technical field. However, if a load is applied in a direction in which the base is separated from the end faces of the tank side walls, the base may move significantly enough to cause the water sealing plate to break, resulting in inviting possible penetration and freezing of underground water.



The anchor in claim 1 is common to the inventions claimed in claims 1 and 2. The anchor in claim 1 make a contribution to the prior art that can prevent breakage of the tank against loads from all directions and is considered as a special technical feature. Therefore, the inventions according to claims 1 and 2 have the same special technical feature and satisfy requirements of unity of invention.

[Case 2] Invention having the same Special Technical Feature

### Title of Invention

A method for dissolving ceramic material and ceramic material core mold

#### What is claimed is:

### [Claim 1]

A method for dissolving a ceramic material from an article easily attacked by a caustic solution, characterized in causing a substance containing an acidic donor to be included in the ceramic material, and, subsequently, causing the ceramic material to be immersed within an anhydrous caustic alkaline bath.

## [Claim 2]

A method for dissolving a ceramic material core mold of a light metal casting or a light alloy casting, characterized in that the light metal casting or the light alloy casting containing a ceramic material core mold including a substance containing an acidic donor is brought into contact with anhydrous caustic alkaline before the casting cools and the casting is immersed within an anhydrous caustic alkaline bath molten by heat of the casting.

#### Overview of the description

The present invention relates to a method for dissolving a ceramic material and a ceramic material core mold from an article easily attacked by a caustic solution.

Conventionally, the ceramic material core mold of a nickel-and-cobalt-based alloy casting is removed by being dissolved in a caustic solution; however, the method cannot be applied to light metal castings or light alloy castings since they are attacked by the caustic solution. In the present invention, since the acidic donor is contained in the ceramic material, only the ceramic material can be selectively dissolved in the anhydrous caustic alkaline bath without the light metal casting or the light alloy casting being attacked. In claim 2, "the casting is brought into contact with anhydrous caustic alkaline before the casting cools" in order to dissolve the anhydrous caustic alkaline by using heat of the casting.

#### [Explanation]

The following point of "causing a substance containing an acidic donor to be included in a ceramic material and, subsequently, causing the ceramic material to be immersed within an anhydrous caustic alkaline bath" is common to claims 1 and 2. "Causing a substance containing an acidic donor to be included in a ceramic material and, subsequently, causing the ceramic material to be immersed within an anhydrous caustic alkaline bath" material and, subsequently, causing the ceramic material to be immersed within an anhydrous caustic alkaline bath" makes contribution to the prior art in which only the ceramic material can be selectively dissolved without the light metal casting or the light alloy casting being

attacked, which, therefore, can be considered as a special technical feature. Consequently, the inventions according to claims 1 and 2 have the same special technical feature and satisfy the requirements of the unity of invention.

[Case 3] Invention having the same Special Technical Feature

Title of Invention

Modified cross-section filament, line of thread of filament, and knit fabric

What is claimed is:

[Claim 1]

A modified cross-section filament having a V-shaped or a C-shaped cross-section and a notch-like narrow portion at about a center portion of an outer periphery of a protruding side of the cross section, wherein a thickness t1 of the narrow portion and the maximum thickness t2 satisfies  $0.40t2 \le t1 \le 0.95t2$  [where,  $a \le t2 \le b$  (a and b are positive constants)]

[Claim 2]

A line of thread of a latent bulky multi-filament obtained by subjecting the modified cross-section filament according to claim 1 to a fluid turbulence process and a subsequent gum stretching process.

[Claim 3]

A knit fabric made of the modified cross-section filament according to claim 1.

Overview of the description and drowing

The present invention provides a modified cross-section filament enabling the manufacturing of a knit fabric having a gloss like a silk fabric, showing excellent in opacity, having a dry feel, and a texture almost like the silk fabric in view of the bulkiness and softness and the thread and the knit fabric made of the modified cross-section filament.



[Explanation]

The modified cross-section filament in claim 1 is common to the inventions claimed in claims 1, 2, and 3. The modified cross-section filament in the inventions claimed in claim 1 make a contribution to the prior art enabling the manufacturing of a knit fabric having a texture close to the silk fabric and, therefore, can be considered as a special technical feature. Consequently, the inventions according to claims 1, 2, and 3 have the same special technical feature and satisfy the requirements of unity of invention. [Case 4] Invention having the same Special Technical Feature

### Title of Invention

Twine used for low friction fiber bearing surface and bearing using the same

#### What is claimed is:

#### [Claim 1]

A twine used for a low friction fiber bearing surface including a TFE filament (10) with a volume ratio that is a maximum of 50% of the TFE, and a nylon doubling (11) for high temperature, wherein the nylon doubling is roughly twisted as a core of the TFE filament of the twine so as to allow a synthetic resin to flow into throughout the roughly twisted folded yarn. (See, Fig. 1)

## [Claim 2]

A bearing, comprising: a cured synthetic resin (14) on a sliding surface; wherein the synthetic resin (14) is a twine including TFE filaments (10), (13') having a volume ratio of a maximum 50% TEF and nylon doublings (11) and (13") for high temperature which are roughly twisted with the nylon doublings being as a core with respect to the twisted TFE filaments so as to be exposed to a bearing surface (15); and wherein the synthetic resin (14) is substantially compatible with the twine and is formed into a continuous solid body without a cavity. (See, Figs. 1, 2, and 3)

#### Overview of the description and drowings

The present invention relates to a low friction fiber bearing and a twine constituting a fiber. A purpose of the present invention is to provide the bearing, which is equipped with reinforcement for reinforcing the low friction fiber on a bearing surface, thereby allowing the TFE filament to be securely held with respect to the rotation of the fragile portion.

In the conventional bearing using the tetrafluoroethylene (TFE) filament for realizing a low friction, the bearing will be remarkably frictionally worn and rapidly broken if the maximum load or more than the maximum load is applied thereto. Further, a mechanical function of the conventional bearing is degraded by an application of the load or a temperature rise, so that the maximum working temperature is extremely controlled.

Nylon for high temperature

Fig. 1



Fig. 2



Fig. 3

The "twine including TFE filaments having a volume ratio of a maximum of 50% TEF, and nylon doublings for high temperature which are roughly twisted with the nylon doublings forming the core with respect to the twisted TFE filaments" is common to the inventions claimed in claims 1 and 2. The "twine including TFE filaments having a volume ratio of a maximum of 50% TEF and nylon doublings for high temperature which are roughly twisted with the nylon doublings forming the core with respect to the twisted TFE filaments having a volume ratio of a maximum of 50% TEF and nylon doublings for high temperature which are roughly twisted with the nylon doublings forming the core with respect to the twisted TFE filaments" make a contribution to the prior art in which the TFE filaments are securely held with respect to the rotation of the fragile portion and is considered as a special technical feature. Therefore, the inventions claimed in claims 1 and 2 have the same special technical feature and satisfy the requirements of unity of invention.

[Case 5] Invention having the same Special Technical Feature

Title of Invention

Quaternary ammonium compounds and use methods thereof

What is claimed is:

## [Claim 1]

A quaternary ammonium compound represented by the following formula.



[Claim 2]

A process of preventing growth and propagation of a microorganism by means of applying the quaternary ammonium compound according to claim 1 in effective dosage to the microorganism selected from bacteria and fungi.

[Claim 3]

A process of reducing a bond between web fibers by applying the quaternary ammonium compound according to claim 1 in slurry of cellulose pulp fibers ....

## Overview of the description

This invention relates to new quaternary ammonium compounds and their application as microbial control agents and desegregation agents.

#### [Explanation]

The inventions claimed in claims 1, 2 and 3 have the common technical features of the quaternary ammonium compound of the invention claimed in claim 1. The quaternary ammonium compound according to claim 1 is a new compound and makes a contribution over the prior art. Therefore, the inventions claimed in claims 1, 2 and 3 have the same special technical features.

[Case 6] Invention having the same Special Technical Feature

#### Title of Invention

A method for the desulfurization of molten pig-iron and a molten pig-iron desulfurization agent

#### What is claimed is:

#### [Claim 1]

A method for the desulfurization of molten pig-iron characterized by blowing powdered calcium carbide containing oil in the proportion of xx% of the weight of the carbide onto the hot metal bath surface using a carrier gas at a rate of ....kg/m<sup>3</sup> against the aforementioned gas.

## [Claim 2]

Molten pig-iron desulfurization agent consisting of powdered calcium carbide containing oil in the proportion of xx% of the weight of the carbide.

#### Overview of the description

This invention concerns a method for the desulfurization of molten pig-iron and a molten pig-iron desulfurization agent for molten pig-iron and molten steel aiming to improve desulfurization efficiency by using the mixture of calcium carbide containing oil as a desulfurization agent during the injection- desulfurization of molten iron.

The types of the above-mentioned oil include gasoline, kerosene, vegetable oil, animal oil and wax. When a desulfurization agent containing such oil is blown onto the hot metal bath surface, gas is released with rapidity and the released gas breaks down the particles of calcium carbide and disperses the agglomeration of the particles, and therefore increases the surface area for reaction with the sulfur in the molten metal. Also the agitation effect of molten metal is enhanced as a result of the quick gasification, and further improves the desulfurization process. Furthermore the oil induces the reducing condition that is convenient for desulfurizing molten metal, and the desulfurization efficiency is expected to improve from this aspect as well.

The mix ratio of oil to the powdered calcium carbide is xx% of the weight of the carbide due to .....

In the aforementioned mixture, the calcium carbide particle digests the oil causing the calcium hydroxide to form on the surface, which improves the flow of the powder material. This enables the mixture to be blown in at a high ratio of ...kg/m<sup>3</sup> against the carrier gas (m<sup>3</sup>), where a minimum quantity of carrier gas is needed, and together with the decrease in the consumption of the powdered calcium carbide as a result of the aforementioned improved desulfurization efficiency, can facilitate smaller reduction in temperature of the molten metal at the time of desulfurization.

"A molten pig-iron desulfurization agent that is composed of a mixture of powdered calcium carbide and oil in the proportion of xx% of the weight of the carbide" is common to both the invention claimed in claim 1 and 2. The "molten pig-iron desulfurization agent that is composed of a mixture of powdered calcium carbide and oil in the proportion of xx% of the weight of the carbide" makes a contribution over the prior art in that the calcium hydroxide forms on the surface of the calcium carbide particle, which improves the flow of the powder material, and therefore is a special technical feature. Accordingly, a common special technical feature exists between the inventions claimed in claim 1 and 2 and therefore they satisfy the requirements for unity of invention.

[Case 7] Invention having the same Special Technical Feature

Title of Invention

Compounds with herbicidal activities

What is claimed is:

[Claim 1]

Compounds having formula



## [Claim 2]

Compounds having formula



Overview of the description

This invention relates to two new compounds that share a common new basic frame structure. It is confirmed that both compounds have a similar herbicidal activity.

[Explanation]

In the invention of chemical compounds, when the matter used to specify the invention is a chemical constitution, and both chemicals share a common new basic frame structure, and both chemicals have the same characteristic or activity, it may be said that both chemical compounds share the same special technical feature.

In this example, since the compounds share a common new basic frame structure,



- 16 -

and both compounds have a herbicidal activity, they both share the same special technical feature. Therefore the inventions claimed in claim 1 and 2 satisfy the requirements for unity of invention.

[Case 8] Invention having the corresponding Special Technical Feature (Technical significance of the inventions are common or closely related to each other.)

Title of Invention

Multi-spindle cooling system

What is claimed is:

#### [Claim 1]

A multi-spindle cooling system, comprising: first and second main spindle units (1, 11), each having a hollow chamber; and first and second heat radiators (8, 81) for discharging heat generated in the first and the second main spindle units (1, 11); wherein the first and the second main spindle units (1, 11) and the first and the second heat radiators (8, 81) are alternately serially connected to each other via steam pipes (10, 101) for guiding steam of working fluid gasified in the hollow chamber to each of the first and the second heat radiators (8, 81) and liquid pipes (12, 121) for guiding the working fluid condensed/liquefied in the first and the second heat radiators (8, 81) to the hollow chamber of each of the first and the second main spindle units (1, 11). (See, Fig. 1) [Claim 2]

A milti-spindle cooling system, comprising: first and second main spindle units (1, 11), each having a hollow chamber; and a heat radiator (8) for discharging heat generated in the first and the second main spindle units (1, 11); wherein the first and the second main spindle units (1, 11) are connected to the heat radiator (8) via steam pipes (10, 101) for guiding steam of working fluid gasified by the hollow chambers and liquid pipes (12, 121) for guiding the working fluid condensed/liquidified by the heat radiator (8) to the hollow chambers. (See, Fig. 2)

Overview of the description and drowing

Both of the inventions relate to a multi-spindle cooling system for cooling bearing of, for example, a plurality of main spindle units in a machine tool. In some of such cooling systems, a heat radiator is provided to each of the main spindle units, which; however, has a drawback that a positional movement between the main spindles degrades processing accuracy since heat deformation and a strain amount vary for each main spindle unit.



The inventions claimed in claims 1 and 2 both have special technical features. The problems in the inventions in contrast with the prior art are to minimize a positional movement between the main spindles and improve processing accuracy by cooling the bearing of a multi-spindle averagely and, therefore, are common or overlapping to each other. Therefore, the technical significances in the inventions claimed in claims 1 and 2 are common or closely related and the inventions have corresponding special technical features and satisfy the requirements of unity of invention.

[Case 9] Invention having the corresponding Special Technical Feature (Technical significance of the inventions are common or closely related to each other.)

Title of Invention

Automatic gas shutoff device

What is claimed is:

[Claim 1]

An automatic gas shutoff device, comprising: a bimetal (4) to be engaged with a valve (3); a heat receiving plate (14) for transmitting a temperature of a burner to the bimetal (4); wherein the valve (3) is closed according to deformation of the bimetal (4) when the temperature of the bimetal (4) drops. (See, Fig. 1) [Claim 2]

An automatic gas shutoff device, comprising: permanent magnets (19, 21); at least two thermo ferrites (20, 22, 23) as passages of lines of magnetization of the permanent magnets (19, 21); a valve (25) of which opening/closing position is kept by a magnetic attractive force of the thermo ferrites (20, 22, 23); and a heat receiving plate (31) for transmitting a temperature of a burner to the thermo ferrites (20, 22, 23);

•••

wherein the thermo ferrites (20, 22, 23) have different magnetic property disappearance temperatures. (See, Fig. 2)

Overview of the description

The invention relates to a safety device for automatically shutting off gas upon sensing drop in temperature when a gas appliance using gaseous fuel during combustion is inadvertently turned off, such as by wind.

The safety device using an electronic circuit having a complicated structure to be operated by a commercial power is publicly known in this field. However, such safety device has a drawback of a possible occurrence of a secondary disaster due to a short circuit or the like.







The inventions claimed in claims 1 and 2 both have special technical features. The problems in inventions in contrast with the prior art are to enable prevention of a secondary disaster due to a short circuit by an automatic shutoff of gas by a mechanical mechanism actuating according to the drop in temperature and, therefore, are common or overlapping to each other. Therefore, the technical significances to the prior art in the inventions claimed in claims 1 and 2 are common or closely related and the inventions have corresponding special technical features and satisfy the requirements of unity of invention.

[Case 10] Invention having the corresponding Special Technical Feature (Technical significance of the inventions are common or closely related to each other.)

Title of Invention Headlight

What is claimed is:

#### [Claim 1]

A headlight, comprising: a reflector; a high pressure discharge lamp (7) which is horizontally held almost in line with a focal position of the reflector and is lit up on DC; magnetic field application means (8, 9) for applying a magnetic field almost at right angle with respect to an arc of the high pressure discharge lamp (7); and current direction switching means (27, 28) for switching an orientation of arc current of the high pressure discharge lamp (7). (See, Figs. 1 and 2)

[Claim 2]

A headlight, comprising: a reflector; a high pressure discharge lamp (3) which is horizontally held almost in line with a focal position of the reflector and is lit up on DC; magnetic field application means (4, 5) for applying a magnetic field almost at right angle with respect to an arc of the high pressure discharge lamp (3); and a control means (6, 7) for variably controlling vector quantity of the magnetic field applied by the magnetic field application means (4, 5). (See, Figs. 1 and 3)

## Overview of the description and drowings

The invention relates to a headlight capable of switching a lighting mode between a low beam during which a light amount is reduced for an oncoming vehicle and a main beam during a normal running.

A headlight including a low beam lamp and a main bean lamp which are switched each other is publicly known.

Recently, use of a lamp having high photo transformation efficiency is demanded in view of energy saving and, for achieving the demand, use of a high pressure discharge lamp is considered. However, if the high pressure discharge lamp is used for both lamps, different from the conventional bulb, there was a drawback that the lighting device becomes weighty and takes space because of its structure.



The inventions claimed in claims 1 and 2 both have special technical features. The problems in inventions in contrast with the prior art is to achieve downsizing and weight reduction of the headlight of the high pressure discharge lamp with high photo transformation efficiency by using only one high pressure discharge lamp to curve an arc thereof in an up-and-down direction to gain low beam and main beam and, therefore, are common or overlapping to each other. The technical significances in the inventions claimed in claims 1 and 2 compared to the prior art are common and the inventions have corresponding special technical features and satisfy the requirements of unity of invention.

[Case 11] Invention having the corresponding Special Technical Feature (Special technical features of the inventions are related complementarily to each other.)

#### Title of Invention

Drive belt and pulley

#### What is claimed is:

#### [Claim 1]

A toothed belt, comprising: a plurality of belt teeth; and a recessed cylindrical surface-shaped stress reducing portion (23) provided on each belt tooth, each stress reducing portion (23) being provided at a connecting portion between a surface of the tooth and a bottom surface of the tooth; wherein each stress reducing portion (23) has an outer periphery of a range between 40% and 60% of a half of the entire outer periphery of each tooth (14). (See, Fig. 1)

## [Claim 2]

A toothed pulley, comprising: a plurality of pulley teeth (16); and a raised cylindrical surface on a shoulder (33) of each pulley tooth;

...

wherein the raised cylindrical surface of one side has an outer periphery of a range between 40% and 60% of a half of the entire outer periphery of each tooth (16). (See, Fig. 2)

Overview of the description and drowings

The invention is directed to a belt driving apparatus including a toothed belt and a toothed pulley, wherein a connection portion between a surface of a tooth and a bottom surface of a tooth of each belt tooth is formed into a cylindrical surface having a specific size as well as a shoulder of a tip of a tooth of the toothed pulley meshing with the toothed belt is formed into a cylindrical surface in order to prevent the belt teeth of the toothed belt from a shear fracture, thereby improving a shearing strength of the toothed belt. A belt transmission including belt teeth having a trapezoidal shape is publicly known in this field. However, such belt transmission had a drawback that the belt teeth are sheared and fractured according to a stress concentration generated on a tooth base portion (i.e., a base portion).



- 24 -

The "recessed cylindrical surface having an outer periphery of a range between 40% and 60% of a half of the entire outer periphery of each tooth" of the invention claimed in claim 1 and the "the raised cylindrical surface having an outer periphery of a range between 40% and 60% of a half of the entire outer periphery of each tooth" of the invention claimed in claim 2 are complementally related to each other. The above described features make a contribution to the prior art for preventing the shear fracturation of the belt teeth of the toothed belt and, therefore, are considered as special technical features. Consequently, the inventions according to claims 1 and 2 have the corresponding special technical features and, thus satisfy the requirements of unity of invention.

[Case 12] Invention having the corresponding Special Technical Feature (Special technical features of the inventions are related complementarily to each other.)

Title of Invention

Transmission device and receiving device of image signal

What is claimed is:

[Claim 1]

A transmission device for transmitting image signals, comprising: a plurality of predictive encoders (12-1 through 12-N) for encoding input image signals by using different prediction functions; ...

a run-length encoder (17) for subjecting the optimum predictive encoded signal having the highest predictive value selected from thus acquired predictive encoded signals to run-length encoding; and ...

a delivery control circuit (19) for delivering an identification signal indicative of a prediction function of the optimum predictive encoded signal output from the discrimination circuit (18) together with an output signal from the run-length encoder (17). (See, Fig. 1)

[Claim 2]

A receiving device for receiving image signals, comprising: a receiving circuit (31) for receiving an image signal subjected to predictive encoding and subsequent run-length encoding and, together with the image signal, an identification signal indicative of the prediction function when being subjected to the predictive encoding; a run-length decoder (33) for subjecting the image signal output from the circuit (31) to run-length decoding; a plurality of predictive decoders (35-1 through 35-N) for encoding the outputs from the decoder (33) by using different prediction functions; ...; and a selection means (36) for selectively extracting only the decoded output corresponding to the identification signal in decoded outputs output from the prediction functions (35-1 through 35-N). (See, Fig. 2)

Overview of the description and drowings

The present invention relates to a signal transmission system for transmitting a highly compressed signal.

Development of a method capable of performing a highly-efficient transmission of an image signal of a facsimile or the like within a limited band of frequency by opening the public communication channels has been demanded. Currently, the run-length encoding method for encoding a continuous length of 1 or 0 is generally employed by which, however, high compressibility cannot be realized. In the present invention, a plurality of predictive encoders is used and, among which, an output of the predictive encoder having the highest predictive value is transmitting after being subjected to the run-length encoding. Therefore, extremely high compressibility can be obtained by the present invention.



Fig. 1



#### [Explanation]

"A plurality of predictive encoders (12-1 through 12-N) for encoding input image signals by using different prediction functions; ... a run-length encoder (17) for subjecting the optimum predictive encoded signal having the highest predictive value selected from thus acquired predictive encoded signals to run-length encoding; and a delivery control circuit (19) for delivering an identification signal indicative of a prediction function of the optimum predictive encoded signal output from the discrimination circuit (18) together with an output signal from the run-length encoder (17)" of the invention claimed in claim 1

and "a receiving circuit (31) for receiving an image signal subjected to predictive encoding and subsequent run-length encoding and, together with the image signal, an identification signal indicative of the prediction function when being subjected to the predictive encoding; a run-length decoder (33) for subjecting the image signal output from the circuit (31) to run-length decoding; a plurality of predictive decoders (35-1 through 35-N) for encoding the outputs from the decoder (33) by using different prediction functions; ...; and a selection means (36) for selectively extracting only the decoded output corresponding to the identification signal in decoded outputs output from the prediction decoders (35-1 through 35-N)" of the invention claimed in claim 2 are complementarily related to each other. The inventions make a contribution to the prior art that improves the compressibility of the run-length encoding by using the plurality of predictive encoders and, therefore, are considered as the special technical features. Consequently, the inventions claimed in claims 1 and 2 have the corresponding special technical features and, thus, satisfy the requirements of unity of invention. [Case 13] Technical feature of the invention is denied to be a Special Technical Feature

Title of Invention Liquid crystal display

What is claimed is:

[Claim 1]

A liquid crystal display for causing light from a linear light source to enter into a light guide plate from a side surface of the light guide plate and for irradiating the light coming out from an upper surface of the light guide plate onto a liquid crystal panel:

(1a) wherein the light guide plate is formed into a cuneiform, i.e., is formed so as to be thinner as the light guide plate comes away from the linear light source;

(1b) wherein a column-shaped spacer having a birefringence property identical to that of the liquid crystal layer of the liquid crystal panel when no voltage is applied is provided as well as the liquid crystal panel is a normally black display type; and

(1c) wherein a reflection layer is provided on a side surface other than the side surface provided with the linear light source of the light guide plate thereon. [Claim 2]

A liquid crystal display for causing light from a linear light source to enter into a light guide plate from a side surface of the light guide plate and for irradiating the light coming out from an upper surface of the light guide plate to a liquid crystal panel:

(2a) wherein the light guide plate is formed into a cuneiform, i.e., is formed so as to be thinner as the light guide plate comes away from the linear light source;

(2b) wherein a column-shaped spacer having a birefringence property identical to that of a liquid crystal layer of the liquid crystal panel when no voltage is applied is provided as well as the liquid crystal panel is a normally black display type; and

(2c) wherein a prism array for causing the light coming out from the light guide plate to come close to parallel rays is disposed between the light guide plate and the liquid crystal panel.

Overview of the description and drowings

A purpose of the present invention is to improve a performance of the conventional liquid crystal display for causing light from a linear light source to enter into a light guide plate from a side surface of the light guide plate and for irradiating the light coming out from an upper surface of the light guide plate onto a liquid crystal panel. First, formation of the light guide plate into a cuneiform enables increase of light vertically entering into the liquid crystal panel. Use of the normally black display contributes to prevent light from passing through spacer portion upon black display. Further, in the invention claimed in claim 1, since a reflection layer is provided on a side surface of the light guide plate, light leakage leaking from the side surface of the light guide plate can be decreased, resulting in

improvement of efficiency of using the light from the light source.

In the invention claimed in claim 2, since the light from the light source is caused to be close to parallel rays by using a prism array, an uniform display could be realized over the entire surface of the panel.



## [Result of prior art search]

Document 1 discloses a liquid crystal display for causing light from a linear light source to enter into a light guide plate from a side surface of the light guide plate and for irradiating the light coming out from an upper surface of the light guide plate onto a liquid crystal panel, (a) wherein the light guide plate is formed into a cuneiform, i.e., is formed so as to be thinner as the light guide plate comes away from the linear light source and (b) a column-shaped spacer having a birefringence property identical to that of the liquid crystal layer of the liquid crystal panel when no voltage is applied is provided as well as the liquid crystal panel is a normally black display type.

#### [Explanation]

The inventions claimed in claims 1 and 2 are common to each other in that a liquid crystal display for causing light from a linear light source to enter into a light guide plate from a side surface of the light guide plate and for irradiating the light coming out from an upper surface of the light guide plate onto a liquid crystal panel, (a) wherein the light guide plate is formed into a cuneiform, i.e., is formed so as to be thinner as the light guide plate comes away from the linear light source and (b) a column-shaped spacer having a birefringence property identical to that of the liquid crystal layer of the liquid crystal panel when no voltage is applied is provided as well as the liquid crystal panel is a normally black display type.

However, Document 1 discloses that a liquid crystal display for causing light from a linear light source to enter into a light guide plate from a side surface of the light guide plate and for irradiating the light coming out from an upper surface of the light guide plate onto a liquid crystal panel, wherein (a) the light guide plate is formed into a cuneiform, i.e., is formed so as to be thinner as the light guide plate comes away from the linear light source and .(b) a column-shaped spacer having a birefringence property identical to that of the liquid crystal layer of the liquid crystal panel when no voltage is applied is provided as well as the liquid crystal panel is a normally black display type. Therefore, both of (a) and (b) are publicly known as of the filing.

Further, no other the same or corresponding special technical features can be seen between inventions claimed in claim 1 and 2.

Therefore, the inventions claimed in claims 1 and 2 do not have the same or corresponding special technical feature can be seen in the claims and do not satisfy the requirements of unity of invention.

[Case 14] Decision of Subject of the Examination

Title of Invention

Floor construction

What is claimed is:

## [Claim 1]

A floor construction, comprising: bridged beams (2) each having a receiving portion (6) on its upper section; long floor panels (3) placed on the bridged beams (2) and formed with grooves (5) in a longitudinal direction on both side surfaces thereof; and floor panel fixtures (4) for fixing the floor panels (3) to the bridged beams (2) by pinching the receiving portions (6) of the bridged beams (2) in a state that the floor panel fixtures are fit to the grooves (5) of the floor panels (3).

## [Claim 2]

The floor construction according to claim 1, wherein the floor panel fixtures (4) are hammered into the bridged beams (2) to pinch the receiving portions (6).

[Claim 3]

The floor construction according to claim 2, wherein the floor panels are made of wood and of which surface is provided with the electron radiation curing resin so as to penetrate into the surface of the floor panel by using the roll coater, followed by hardening the resin to form surface coating.

# [Claim 4]

The floor construction according to claim 3, wherein the floor panels use polyester acrylate, epoxy acrylate, and urethane acrylate, or a mixture of the acrylate and the silicon acrylate as an oligomer of the electron radiation curing resin and multi functional acrylate monomer or multi functional methaacrylate monomer as a crosslinker of the electron radiation curing resin.

Overview of the description and drowings

The present invention relates to a floor construction for underlying a plurality of floor panels on bridged beams.

A purpose of the present invention is to provide a floor construction capable of exchanging only a required floor panel even after construction of the floor with ease and capable of setting joint freely without necessity to screw fixtures of the plate materials into the bridged beams.

The floor construction of the present invention comprises bridged beams (2) each having a receiving portion (6) on its upper section; long floor panels (3) placed on the bridged beams (2) and formed with grooves (5) in a longitudinal direction on both side surfaces thereof; and floor panel fixtures (4) for fixing the floor panels (3) to the bridged beams (2) by pinching the receiving portions (6) of the bridged beams (2) in a state that the

floor panel fixtures are fit to the grooves (5) of the floor panels (3).

Further, in order to improve durability of a surface of the floor panel, the floor panel is made of wood and of which surface is provided with the electron radiation curing resin so as to penetrate into the surface of the floor panel by using the roll coater, followed by hardening the resin to form surface coating. According to the penetration of the electron radiation curing resin into the floor panel, the durability of the surface of the floor panel can be remarkably improved more than a case where the electron radiation curing resin is merely applied onto the surface of the floor panel. Preferably, polyester acrylate, epoxy acrylate, urethane acrylate, or a mixture of the acrylate and silicon acrylate are used as the oligomer of the electron radiation curing resin and multi functional acrylate monomer or multi functional methacrylate monomer is used as the crosslinker of the electron radiation curing resin.



## [Result of prior art search]

The floor construction of the inventions according to claims 1 and 2 are disclosed in Document 1 and thus is a publicly known art.

#### [Explanation]

The invention claimed in claim1, and 2 lack novelty over Document 1 and has no particular special technical feature.

Next, the technical feature added to the invention claimed in claim 3, which is the same category and including all the matters specifying the invention claimed in claim 2, relates to the surface coating of the floor panel which is characterized in the forcing penetration of the electron radiation curing resin, whereas, the technical feature of the invention claimed in claim 2 relates to the fixture of the floor panel onto the bridged beam and thus they have low technical relevance to each other. The problem of improvement of durability of the surface of the floor panel that is seen from the technical feature of the

invention claimed in claim 3 has little relevance with the problem of the easy exchange of the floor panel after construction of the invention claimed in claim 2. For this reason, it is not required to determine whether the inventions claimed in claim 3 and 4 have a special technical feature.

In addition, there is no any other reason to decide that it is efficient to examine the inventions claimed in claim 3, 4 together with inventions claimed in claim 1,2.

Therefore, the inventions claimed in claims 1 and 2 shall become the subject of the examination as the invention for which whether there is any special technical feature has already been determined. On the other hand, the inventions claimed in claims 3 and 4 shall not become the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



Inventions which should be the subjects of the examination under 4.1

\* Shaded inventions should be the subjects of the examination.

[Case 15] Decision of Subject of the Examination

Title of Invention

Sanitary sewage treatment apparatus

What is claimed is:

[Claim 1]

A sanitary sewage treatment apparatus, comprising a light reaction chamber including a high-output lamp for emitting pulsed light of, mainly, a wavelength of ultraviolet light.

[Claim 2]

The sanitary sewage treatment apparatus claimed in claim 1, wherein photocatalyst exists in the light reaction chamber.

[Claim 3]

The sanitary sewage treatment apparatus according to claim 2, wherein an oxidant addition mechanism is provided on an upstream side of the light reaction chamber. [Claim 4]

The sanitary sewage treatment apparatus according to claim 1 wherein an oxidant addition mechanism is provided on an upstream side of the light reaction chamber. [Claim 5]

The sanitary sewage treatment apparatus according to claim 4, wherein a return line for returning outflow water of the light reaction chamber to the light reaction chamber is provided.

Overview of the description

The present invention relates to an apparatus for treating sanitary sewage in a highly effective manner by irradiating light of a wavelength of, mainly, high output ultraviolet light to the sanitary sewage heavily containing persistent COD. According to the present invention, since the light is irradiated at high output, long throw of light and high treatment effect can be produced and, since the light is irradiated intermittently for a short period of time, the light is momentary irradiated with extremely strong intensity, on the other hand, the power consumption is remarkably small and cost required for the treatment is low. Further, in a case where the photocatalyst is contained, such an effect can be produced that radical such as hydroxyl radical generated according to an action of the photocatalyst excited by light reacts contaminated material to generate oxidative degradation. Further, when oxidant is added, effect of generating oxidative degradation due to an action of oxidant can be produced. A return line for returning at least a portion of the outflow water from the light reaction chamber to the light reaction chamber is provided. As a result thereof, at least a portion of the unreacted material that could not be treated in the light reaction chamber can be treated in the light reaction chamber again, so that higher

treatment effect can be produced.

# [Result of prior art search]

The sanitary sewage treatment apparatus of the inventions claimed in claims 1 and 2 has already been publicly known, as disclosed in Document 1.

# [Explanation]

The invention claimed in claims1 and 2 lack novelty over Document 1 and has no particular special technical feature.

Next, with the invention claimed in claim3 in the same category that include all matters specifying the invention in claim 2, a special technical feature described as "A sanitary sewage treatment apparatus comprising a light reaction chamber, "wherein an oxidant addition mechanism is provided on an upstream side of the light reaction chamber" was found. Therefore, the inventions claimed in claims 1-3 for which whether there is any special technical feature has already been determined and the inventions claimed in claims 4-5 having special technical feature which is the same as or correspond to the special technical feature found shall become subject of the examination.



Inventions which should be the subjects of the examination under 4.1

\* Shaded inventions should be the subjects of the examination.
[Case 16] Decision of Subject of the Examination

### Title of Invention

Coating method for corrosion protection and coating material to be used therein

What is claimed is:

## [Claim 1]

A coating method comprising the steps of:

atomizing a coating material containing a corrosion protection material X by using compressed air;

causing the atomized coating material to be electrostatically charged by using an electrode disposition A; and

spraying the coating material onto an article to be coated.

[Claim 2]

A coating material containing a corrosion protection material X.

[Claim 3]

An electrifier comprising an electrode disposition A.

## Overview of the description

The present invention relates to a coating method having high corrosion protection effect and hardly generating coating unevenness. Conventionally, a method for performing corrosion protection coating by spraying a corrosion protection material has been known.

However, a material having less corrosion protection effect is used for coating in the conventional methods, so that satisfactory corrosion protection effect by coating cannot be obtained, and coating unevenness is generated in a case where the coating is performed with respect to an article having a complicated structure.

The present invention improves the corrosion protection effect by using a new material X having high corrosion protection effect as a coating material, and hardly generates coating unevenness, by charging the atomized coating material.

Further, the electrode disposition A for causing the atomized material to be efficiently charged has novelty.

#### [Explanation]

The invention claimed in claim 1 has two special technical features, "a coating material containing a corrosion protection material X" and "an electrode disposition A".

In this way, when an invention has several different special technical features, the examiner shall select one of the special technical features, and the inventions having a special technical feature which is the same as or corresponds to the special technical feature selected shall become the subject of the examination.

That is to say, if the examiner select the special technical feature of "a coating material containing a corrosion protection material X", the inventions claimed in claims 1 and 2 having a special technical feature which is the same as or corresponds to the special technical feature selected shall become the subject of the examination, and if the examiner select the special technical feature of "an electrode disposition A", the inventions claimed in claims 1 and 3 having a special technical feature which is the same as or corresponds to the special technical feature of "an electrode disposition A", the inventions claimed in claims 1 and 3 having a special technical feature which is the same as or corresponds to the special technical feature selected shall become the subject of the examination.

HoweverIn addition, if the examiner determines that it is efficient to collectively examine the inventions claimed in claims 1 and 2 as the subject of the examination based on the special technical feature and the invention claimed in claim 3, or the inventions claimed in claims 1 and 3 as the subject of the examination based on the special technical feature and the invention claimed in claim 2, comprehensively taking into consideration the statement of the description, etc., and the common general knowledge as of the filing and prior art search, all of the inventions claimed in claims 1-3 shall become the subject of the examination.

[Case 17] Decision of Subject of the Examination

Title of Invention

Coolant and freezer

What is claimed is:

### [Claim 1]

A coolant being a mixture mixed with saturated hydrocarbon having a boiling point of a range between  $-50^{\circ}$ C and  $0^{\circ}$ C.

[Claim 2]

The coolant according to claim 1, wherein the mixture is a mixture of propane (C3H8) and butane (C<sub>4</sub>H<sub>10</sub>) having a mixture ratio of 1.6-4.5:1.

[Claim 3]

The coolant according to claim 2, wherein the mixture ratio is 1.8-2.5:1.

[Claim 4]

A freezer using the coolant according to claim 3.

[Claim 5]

The freezer according to claim 4, wherein a metal-made sliding part of a compression mechanism of the freezer includes a surface layer mainly formed of metal and sulfur so as to have a thickness of a range between  $1 \times 10-3 \mu m$  and  $50 \mu m$  or a surface quench-hardened layer having vickers' hardness equal to or more than 400 and a thickness of equal to or more than  $2 \mu m$ .

[Claim 6]

The freezer according to claim 5, wherein at least one oil selected from a group consisting of naphthenic oil, paraffinic oil, and synthetic oil is used as freezer oil

Overview of the description

The present invention relates to a freezer which employs a coolant made of saturated hydrocarbon having low ozone degradation factor and low global warming potential as a replacing CFC coolant as well as, in order to improve reliability and safety of the freezer, durability of the compression mechanism is enhanced and freezer oil (i.e., lubricant) having high reliability is sealed therein. In the present invention, the saturated hydrocarbon is made of propane ( $C_3H_8$ ) and butane ( $C_4H_{10}$ ) having a boiling point of a range between -50°C and 0°C and having a mixture ratio 1.6-4.5:1, more preferably, 1.8-2.5:1.

Further, in the compression mechanism of the freezer, the sliding portion of the metal-made sliding part is subjected to the surface treatment and the compound layer mainly including metal and sulfur is formed into a thickness of a range between  $1 \times 10-3 \mu m$  and  $50 \mu m$  to form the surface layer or the metal-made sliding part is formed into the surface quench-hardened layer having Vickers' harness equal to or more than 400 and a thickness equal to or more than  $2 \mu m$ , thereby securing a stable sliding property to improve

the durability. Further, the naphthenic oil, paraffinic oil, and synthetic oil having high reliability in use of freezer oil to be used in freezer and being manufactured at low cost are employed to improve the reliability of the sliding member.

## [Result of prior art search]

The coolant of the inventions according to claims 1 through 3 is disclosed in Document 1 and thus is a publicly known art.

## [Explanation]

The invention claimed in claim1-3 lack novelty over Document 1 and has no particular special technical feature. Further, the invention claimed in claim 4 which is the same category and including all the matters specifying the invention claimed in claim 3 is the freezer employing the coolant disclosed in Document 1 and thus the invention claimed in claim 4 is a mere addition of the well-known art to the prior art disclosed in Document 1 and does not produce any new effect. Therefore, the invention according to claim 4 has no special technical feature.

Next, the technical feature newly added to the invention claimed in claim 5 which is the same category and including all the matters specifying the invention claimed in claim 4 relates to the surface treatment of the sliding portion in the compression mechanism, whereas the technical feature of the invention claimed in claim 4 relates to the composition of the coolant of the freezer, and thus the both inventions have low technical relevance to each other. Such a problem having seen from the technical feature of the invention claimed in claim 5 that the durability is to be improved while keeping the slidability of the compression mechanism has little relevance to the problem of the invention claimed in claim 4 that the coolant having low ozone degradation factor and low global warming potential is to be employed. For this reason, it is not required to determine whether the inventions claimed in claim 5 and 6 have a special technical feature.

In addition, there is no any other reason to decide that it is efficient to examine the inventions claimed in claim 5, 6 together with inventions claimed in claim 1-4.

Therefore, the inventions claimed in claims 1 to 4 shall become the subject of the examination as the invention for which whether there is any special technical feature has already been determined. On the other hand, the inventions claimed in claims 5 and 6 shall not become the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



Inventions which should be the subjects of the examination under 4.1

[Case 18] Decision of Subject of the Examination

Title of Invention

Organic electrolyte secondary battery

What is claimed is:

[Claim 1]

An organic electrolyte secondary battery, comprising: a positive electrode and a negative electrode using  $LiMO_2$  (M is one or more of transition metal elements) as a cathode active material.

[Claim 2]

The organic electrolyte secondary battery according to claim 1, wherein at least Ni and Co are included as M.

[Claim 3]

The organic electrolyte secondary battery according to claim 2, wherein the cathode active material is  $LiNi_{(1-x-y)}Co_xMn_yO_2$  (where 0 < x < 1, 0 < y < 1, x + y < 1). [Claim 4]

The organic electrolyte secondary battery according to claim 3, wherein graphite particles of ellipsoidal body having an average grain size of a range between 10 $\mu$ m and 40 $\mu$ m and a ratio between a short axis and a long axis is equal to or more than 1:2 is used as the negative electrode.

Overview of the description

The present invention relates to an organic electrolyte secondary battery to be used as a power source of a portable-type electronic tool such as a digital camera. In such an organic electrolyte secondary battery, by using a general expression of LiMO<sub>2</sub> (M is one or more of transition metal elements) as a cathode active material, the organic electrolyte secondary battery which is excellent in energy density can be obtained. The oxide constituting the positive electrode material preferably includes at least Ni and Co as M, more preferably, uses a complex oxide expressed by LiNi<sub>(1-x-y)</sub>Co<sub>x</sub>Mn<sub>y</sub>O<sub>2</sub> (where 0 < x < 1, 0 < y < 1, x + Y < 1) as the M. More specifically, in a case where the complex oxide expressed by LiNi<sub>(1-x-y)</sub>Co<sub>x</sub>Mn<sub>y</sub>O<sub>2</sub> (where 0 < x < 1, 0 < y < 1, x + Y < 1) is used, an organic electrolyte secondary battery excellent in cycle characteristic can be obtained.

Graphite particles of an ellipsoidal body having an average grain size of a range between  $10\mu m$  and  $40\mu m$  and a ratio between the short axis and the long axis equal to or more than 1:2 is optimum as the negative electrode of the organic electrolyte secondary battery. By using the graphite particles of the ellipsoidal body, a particle orientation becomes random, which is advantageous in the high rate discharge characteristics and the low-temperature characteristics.

## [Result of prior art search]

The organic electrolyte secondary battery of the inventions according to claims 1 through 3 is disclosed in Document 1 and thus is a publicly known art.

## [Explanation]

The invention claimed in claim1-3 lack novelty over Document 1 and has no particular special technical feature.

Next, the technical feature added to the invention claimed in claim 4, which is the same category and including all the matters specifying the invention claimed in claim 3 relates to a shape of the particles to be used in the negative electrode, whereas the technical feature of the invention claimed in claim 3 relates to a kind of active material of the positive electrode and thus both have low technical relevance to each other. Such a problem seen from the technical feature of the invention claimed in claimed that the high rate discharge characteristic and the low-temperature characteristics are realized has little relevance with the problem of realizing the excellent energy density and excellent cycle characteristic of the invention claimed in claimed 3. For this reason, it is not required to determine whether the inventions claimed in claimed 4 has a special technical feature.

In addition, there is no any other reason to decide that it is efficient to examine the inventions claimed in claim 4 together with inventions claimed in claim 1-3.

Therefore, the inventions claimed in claims 1-3 shall become the subject of the examination as the invention for which whether there is any special technical feature has already been determined. On the other hand, the inventions claimed in claims 4 shall not become the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



Inventions which should be the subjects of the examination under 4.1

[Case 19] Decision of Subject of the Examination

Title of Invention

Self-closing type sliding door

What is claimed is:

#### [Claim 1]

A self-closing type sliding door, comprising: an upper rail attached to an upper section of a frontage in an inclined manner; door rollers running in the upper rail; and a door coupled to the door rollers to be hung from the upper rail; wherein a self-closing type sliding door having such a configuration that the door automatically closes owing to its self-weight is equipped with a braking device for controlling a closing speed of the sliding door when the door closes the frontage.

## [Claim 2]

The self-closing type sliding door according to claim 1, wherein the braking device is an air cylinder (8) attached near the upper rail. (See, Fig. 1) [Claim 3]

The self-closing type sliding door according to claim 1, wherein the braking device includes a rack (4) attached to the upper rail and a braking pinion (22) attached near the door rollers. (See, Fig. 2)

Overview of the description and drowings

Conventionally, known is a sliding door hung from an upper rail attached to a frontage upper section in which the door is automatically closed by using the self-weight of the door owing to inclination of the upper rail.

However, in such a sliding door, when the door closes, since a speed increases due to its self-weight, the door swiftly impacts on a door frame to generate noise when the door reaches a closing end. Further, there is a risk for fingers being caught in the door.

To solve the above described problem, the present invention is configured to include a braking device for controlling the closing speed of the sliding door.



#### [Result of prior art search]

Document 1 discloses a self-closing sliding door comprising an upper rail attached to an upper section of a frontage in an inclined manner, door rollers running in the upper rail, and a door coupled to the door rollers to be hung from the upper rail, wherein the door automatically closes according to its own weight, the sliding door further comprising a frictional wheel and a frictional plate for the purpose of controlling the speed when the door closes the frontage. The "frictional wheel and the frictional plate" of Document 1 are variation of the "braking device", so that the invention according to claim 1 is disclosed in Document 1.

### [Explanation]

The invention claimed in claim1 lacks novelty over Document 1 and has no particular special technical feature.

Next, with the invention claimed in claim2 which is the smallest claim number attached out of inventions in claims in the same category that include all matters specifying the invention in claim 1, a special technical feature described as "A self-closing type sliding door, comprising; an upper rail attached to an upper section of a frontage in an inclined manner; door rollers running in the upper rail; and a door coupled to the door rollers to be hung from the upper rail; wherein a self-closing type sliding door having such a configuration that the door automatically closes owing to its self-weight is equipped with a braking device for controlling a closing speed of the sliding door when the door closes the frontage, and wherein the braking device is an air cylinder (8) attached near the upper rail" is found. Therefore, the inventions claimed in claim 1 and 2 shall become subject of the examination as the invention for which whether there is any special technical feature has already been determined.

In addition to that, the invention claimed in claim 3 is an invention which is in the same category that includes all matters specifying the invention in claim 1, and is determined as an invention that can be examined together effectively and therefore become the subject of the examination.



[Case 20] Decision of Subject of the Examination

Title of Invention Stepladder

What is claimed is:

## [Claim 1]

A stepladder, comprising: a pair of leg bodies (1) including a pair of left support and right support (2), in between which tread bars (3) are bridged; wherein the pair of leg bodies (1) are rotationally coupled to each other via pivots (4); wherein, in the stepladder equipped with a pair of left support leg and right support leg (6) for supporting both sides of the leg bodies (1), the pair of left support leg and right support leg (6) are rotatably coupled via pivots (4); and wherein ends (7) of the support legs (6) can be grounded on a ground surface between leg bodies.

[Claim 2]

The stepladder according to claim 1, wherein the support legs (6) can be grounded on the ground surface outside the space between leg bodies. [Claim 3]

The step ladder according to claim 2, wherein the ends (7) of the support legs (6) are configured to be extendable and positionally adjustable in an inside-and-outside direction of the ground surface between leg bodies.

[Claim 4]

The stepladder according to claim 1, wherein the support fittings (8) are rotatably coupled to the pivots (4) and support fittings (8) and upper ends of the support legs (6) are engageably coupled correspondingly with each other.

# [Claim 5]

The stepladder according to claim 3, wherein predetermined tread bar (3) of each leg body (1) is provided with leg holders (9) capable of pinching the support legs (6) and the support legs (6) are disposed between the leg bodies (1) after the leg bodies (1) are folded. [Claim 6]

The stepladder according to claim 3: wherein the pair of leg bodies (1) are coupled so as to be in flush with each other via coupling portions (5); and wherein the support legs (6) are extending downwardly in a cross direction with respect to flat surfaces of leg bodies from the coupling portions (5) and the ends (7) of the support legs (6) can be grounded on the ground surface.

## Overview of the description and drowings

The present invention relates to a stepladder capable of being manufactured into a simple configuration with less number of parts at low cost, improving stability thereof, being prevented from overturning to thereby secure safety condition thereof, encouraging

comfortable working on a top board thereof, having improved user friendliness in using a ladder as well as modifying the existing stepladder and ladder with ease, and, while not in use, being folded into a compact size and, in piling up for storage thereof, protecting the tread bars.

According to the present invention, in a stepladder equipped with a pair of leg bodies (1) including a pair of left support and right support (2), in between thereof thread bars (3) being bridged and the pair of leg bodies (1) being rotatably coupled to each other via pivots (4), and a pair of right support leg and left support leg (6) for supporting both sides of the leg bodies (1), a pair of right support leg and left support leg (6) are rotatably coupled via the pivots (4), the ends (7) of the support legs (6) are configured to be extendable such that the support legs can be grounded on the ground surface between the leg bodies, thereby improving stability of the stepladder and preventing overturning thereof to secure safety thereof in comparison with the convention support legs (6) for supporting one of the leg bodies (1).

Further, the support fittings (8) are rotatably coupled to the pivots (4) and support fittings (8) and upper ends of the support legs (6) are engageably coupled correspondingly with each other, therefore a form of the use can be changed based on the situation of the ground by releasing the couple of support fittings (8) and the support legs (6).



Fig. 1

Fig. 2

## [Result of prior art search]

The stepladder of the inventions claimed in claims 1 and 2 are publicly known as it is disclosed in Document 1. Document 1 is silent on "ends of the support legs are configured to be extendable and positionally adjustable in an inside-and-outside direction of the ground surface between leg bodies".

## [Explanation]

The inventions claimed in claim1 and 2 lack novelty over Document 1 and have no particular special technical feature.

Next, with the invention claimed in claim3 which is the same category that include all matters specifying the invention in claim 2, a special technical feature described as "A stepladder wherein the pair of leg bodies (1) are rotationally coupled to each other via pivots (4); the pair of left support leg and right support leg (6) are rotatably coupled via pivots (4); and wherein the ends (7) of the support legs (6) are configured to be extendable and positionally adjustable in an inside-and-outside direction of the ground surface between leg bodies" was found. Therefore, the inventions claimed in claim 1-3 shall become subject of the examination as the invention for which whether there is any special technical feature has already been determined. On the other hand, the inventions claimed in claim 5 and 6 shall become the subject of the examination as the invention as the invention having any special technical feature which is the same as or corresponding to the special technical feature found.

The invention claimed in claim 4 are inventions which are in the same category that includes all matters specifying the invention in claim 1, and therefore can be determined as inventions that can be examined together effectively and therefore are inventions that become the subject of the examination.



Inventions which should be the subjects of the examination under 4.1

Invention added to the subjects of the examination under 4.2(1)

[Case 21] Decision of Subject of the Examination

Title of Invention

A prism sheet and a planar light source apparatus

What is claimed is:

# [Claim 1]

A prism sheet, comprising a flat sheet body, a prism part consisting of multiple prisms disposed on the substantially entire surface of said sheet body, and a lens part consisting of multiple lenses disposed on a part of the other surface of said sheet body. [Claim 2]

A prism sheet of claim 1 in which said lenses consist of projections extending to cross said prism and having height decreasing from one end to the other end of said prism sheet (Refer to Fig. 1).

# [Claim 3]

A planar light source apparatus, comprising multiple LED light sources, a light guide plate having a light incident surface receiving light emitted from the multiple LED light sources and a light emitting surface emitting the incident light, and a prism sheet stated in claim 2 disposed to face said light emitting surface of said light guide plate. [Claim 4]

A planar light source apparatus, comprising multiple LED light sources, a light guide plate having a light incident surface receiving light emitted from the multiple LED light sources and a light emitting surface emitting incident light, and a prism sheet stated in claim 1 disposed to face said light emitting surface of said light guide plate, and further comprising a frame accommodating said multiple LED light sources and light guide plates, and an elastic part formed between the surface of said light guide plate opposite to the light incident surface and said frame and pressing said light guide plate (Refer to Fig. 2).

Overview of the description and drowings

In an end face incident type backlight mechanism in which LED chips are disposed on the end face of the light guide plate, there is a problem of uneven brightness in which a light portion and a dark portion occur around the area in which LEDs are disposed (light incident part) on the prism sheet disposed above the light guide plate. Also, in a backlight of a display device used in a mobile body such as an automobile, there is a problem of noise generation caused by the contact between the light guide plate and the frame due to vibration of the mobile body. The present invention provides a prism sheet and a planar light source apparatus best suited to solve such problem.



### [Result of prior art search]

The prism sheet of the invention claimed in claim 1 is stated in document 1 and it is already publicly known.

## [Explanation]

(A) Decision of subject of the examination based on special technical feature (Refer to 4.1.)

The invention claimed in claim 1 lacks novelty over document 1 and has no special technical feature.

Next, since a special technical feature, "The prism sheet ... in which said lenses consist of projections extending to cross said prism and having height decreasing from one end to the other end of said prism sheet" is found in the invention claimed in claim 2 having the smallest number among inventions belonging to the same category comprising all matters specifying the invention of the invention claimed in claim 1, the inventions claimed in claims 1 and 2, for which existence of special technical feature has been determined, and the invention claimed in claim 3 having the special technical feature same as or corresponding to the special technical feature should be the subjects of the examination.

(B) Decision of subject of the examination based on examination efficiency (Refer to 4.2.)

The invention claimed in claim 4 is an invention of the same category containing all matters specifying the invention of claim 1. However, the technical feature of the invention claimed in claim 4 is "a flexible part ... pressing said light guide plate," and the technical relevance with "prism sheet" of the invention claimed in claim 1 is small. Furthermore, the problem to be solved by the invention claimed in claim 4, "to suppress

noise generation," has small relevance with the problem to be solved by the invention claimed in claim 1, "to suppress uneven brightness."

Then, as a result of examination of the inventions claimed in claims 1 to 3, the invention claimed in claim 4 is not an invention which can be examined without any necessity for substantially additional prior art search and determination, and there is no other reason that makes it possible to say that examination together with the inventions claimed in claims 1 to 3 is efficient.

Therefore, inventions claimed in claims 1 to 3 should be the subjects of the examination, and the invention claimed in claim 4 should not be included in the subjects of the examination. And, since the claimed invention which is not a subject of the examination is included, the reason for refusal due to failure to comply with the requirement of Article 37 should be notified.



[Case 22] Decision of Subject of the Examination

Title of Invention Image forming device

What is claimed is:

[Claim 1]

An image forming equipment including multiple image carriers, multiple charging devices to charge said image forming equipment, multiple developing devices to form a toner image by attaching the toner to the latent image of said image carriers, multiple charger cleaning devices that cleans said charging devices, and the image forming equipment is characterized by said developing devices that comprises a developing roller that has a contact with said image carriers and toner feed roller that supplies the toner to said developing devices, and said developing roller and toner feed roller is formed by the axis and the polyurethane layer provided in the outer periphery of said axis. [Claim 2]

An image forming equipment defined in claim 1 characterized by a toner feed roller in said developing devices with an irregular concavity and convexity forming on the surface of the polyurethane layer. (see Figure 1)

[Claim 3]

An image forming equipment defined in claim 2 characterized by the irregular concavity and convexity on the surface of the toner feed roller of said developing devices having an arithmetic mean coarseness (Ra) in the lap direction and axis direction of 5-100 $\mu$ m, and a ten point height of irregularities (Rzjis) in the lap direction and axis direction of 20-400 $\mu$ m. (see Figure 1)

## [Claim 4]

An image forming equipment defined in claim 1 characterized by a toner feeder roller of said image carriers with a cell diameter of 0.2~0.3mm, and consisting of a polyurethane layer that has partition walls that are wider that half the diameter of the cell. (see Figure 2)

## [Claim 5]

Said image forming equipment is an image forming equipment defined in claim 1 that is characterized by having a usage history calculating device that calculates the usage history of said image carriers, and based on the usage history calculated by the said usage history calculating device being able to set the operating conditions of said charger cleaning devices individually. (see Figure 3)

#### Overview of the description and drowings

In recent years the image forming equipment using the electronic photography method has become popular not only for conventional office use, but also for on-demand printing. At the same time the image forming equipment is being required to produce high-resolution full color images. The optimal image forming equipment for creating a high-resolution full color image is composed of multiple image carriers, multiple charging devices, multiple developing devices and multiple charger cleaning devices. Furthermore, when toner feed roller was low on the toner feeding capability, the toner quantity supplied to the developing roller was inadequate and lead to a problem of not being able to obtain good images. Moreover, it is common for an image forming equipment having multiple image carriers to have multiple charging devices with different operating times, and therefore each charging device differs in their dirtiness. Therefore even if the cleaning of the multiple charging devices were conducted simultaneously, the cleaning will not be suitable for the dirtiness of each charging device and it will be difficult to maintain the electrostatic charge performance if each charging device.



[Result of prior art search]

The image forming equipment defined in claim 1 and claim2 is described in Document 1 and is known in the prior art. Furthermore, the production of high-resolution full color images is a well-known problem that was solved prior to the filing of the patent application.

#### [Explanation]

(A) Decision of subject of the examination based on special technical features (See 4.1)

The invention claimed in claim 1 and claim 2 lack novelty according to Document 1 and does not have a special technical feature.

Next, with the invention claimed in claim 3 which is in the same category that include all

matters specifying the invention in claim 2, a special technical feature described as "the irregular concavity and convexity on the surface of the toner feed roller having an arithmetic mean coarseness (Ra) in the lap direction and axis direction of 5-100 $\mu$ m, and a ten point height of irregularities (Rzjis) in the lap direction and axis direction of 20-400 $\mu$ m" has been found. Therefore the inventions claimed in claim 1 ~ claim 3 for which whether there is any special technical feature has already been assessed are the subject of the examination are.

(B) Decision of subject of the examination based on examination efficiency (See 4.2)

Furthermore, since the invention claimed in claim 4 is in the same category that includes all matters specifying the invention in claim 1, it is to be included in the subject of the examination.

Meanwhile, the production of high-resolution full color images is a well-known problem that was solved prior to the filing of the patent application. Taking into consideration the specific problem the invention is trying to solve determined by the additional technical features of claim 2 and claim 3, that are have been determine as the subject of the examination in "4.1Decision of subject of the examination based on special technical features", in relation to the invention defined in claim 1, the problem the invention defined in claim 1 is trying to solve can be understood to be how to improve the toner feeding capability of the toner feed roller.

On the other hand, the technical feature added to claim 5 in relation to the invention defined in claim 1 is that it is equipped with a usage history calculating device that calculates the usage history of image carriers, and based on the usage history calculated by the said usage history calculating device being able to set the operating conditions of said charger cleaning devices individually. The specific problem the invention is trying to solve that can be understood from the additional technical feature of the invention defined is how to conduct cleaning according to multiple charging devices with different usage times. The specific problem the invention is trying to solve that can be understood from the invention defined has little relevance with the problems of the invention defined in claim 1.

In addition, the invention defined in claim 5 is not an invention that can be examined without substantially conducting additional prior art searches and making a determination as a result of the examination of the inventions defined in claims  $1\sim3$ , nor are there any other reasons to decide it is efficient to examine together the inventions defined in claim  $1\sim3$ .

Therefore, the inventions defined in claim  $1 \sim 4$  are subject of the examination, and the invention defined in claim 5 will be excluded from the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



[Case 23] Decision of Subject of the Examination

Title of Invention Solar energy collector

What is claimed is:

#### [Claim 1]

A solar energy collector including an absorber plate (1) for absorbing solar heat, a heat collection tube (2) which is disposed in the adjacent to the absorber plate (1) and through which heat transfer medium for receiving heat from the absorber plate (1) flows, and a heat insulation material (3) provided behind the heat collection tube (2): wherein heat transfer from the absorber plate (1) to the heat collection tube (2) is performed by means of a heat conductive rubber (4).

[Claim 2]

The solar energy collector according to claim 1, wherein the heat conductive rubber is a heat conductive rubber sheet (4) which tightly contacts with a periphery of a rear side portion of the heat collection tube (2) of which middle portion contacts the absorber plate (1) as well as of which both ends contacts the absorber plate (1).

[Claim 3]

The solar energy collector according to claim 1, wherein the heat conductive rubber contains graphite having an average grain size of a range between  $10\mu m$  and  $150\mu m$ , aluminum powder having an average grain size of a range between  $0.1\mu m$  and  $10\mu m$ , and titanate base coupling agent of a total amount of a range between 1 and 30 parts by weight with respect to ethylene-propylene base polymer of 100 parts by weight. [Claim 4]

The solar energy collector according to any one of claims 1 through 3, wherein the radiation prevention member (5) is provided between the absorber plate (2) and the heat insulation material (3).

Overview of the description and drowing

The present invention is directed to a solar energy collector equipped with an absorber plate (1) for absorbing solar heat, a heat collection tube (2) which is disposed in the adjacent to the absorber plate (1) and through which heat transfer medium receiving heat from the absorber plate (1) flows, and a heat insulation material (3) provided behind the heat collection tube (2), wherein heat transfer from the absorber plate (1) to the heat collection tube (2) is performed by means of a heat conductive rubber sheet (4). According to the present invention, the heat transfer from the absorber plate (1) to the heat collection tube (2) is performed by means of the heat conductive rubber sheet (4). With the above configuration and, further preferably, the heat conductive rubber sheet (4) is tightly contacted to the periphery of the heat collection tube (2), a contacting area between the

absorber plate (1) and the heat conductive rubber and a contacting area between the heat conductive rubber and the heat collection tube (2) increase, thereby achieving improvement of heat conduction efficiency from the absorber plate (1) to the heat collection tube (2) and improvement of heat collector efficiency. Further, the heat conductive rubber is made of graphite having an average grain size of a range between 10µm and 150µm, aluminum powder having an average grain size of a range between 0.1µm and 10µm, and titanate base coupling agent of a total amount of a range between 1 and 30 parts by weight with respect to ethylene-propylene base polymer of 100 parts by weight, resulting in improving the heat conduction efficiency and improving the collector efficiency. Still further, according to the present invention, since the radiation prevention member (5) is provided between the absorber plate (1) and the heat insulation material (3), heat loss due to radiation from the absorber plate (1) to the heat insulation material (3) can be decreased to thereby improve the collector efficiency. Still further, since the cover glass (7) having subjected to the Low-E processing in which the absorption and/or reemissivity of the thermal energy is low is provided over the opening portion of the case (6), thermal radiation from the absorber plate (1) is controlled to improve the collector efficiency.



### [Result of prior art search]

The solar energy collector of the invention according to claim 1 is disclosed in Document 1 and thus has already been publicly known.

#### [Explanation]

(A) Decision of subject of the examination based on special technical features (See 4.1)

The invention claimed in claim1 lacks novelty over Document 1 and has no particular special technical feature.

Next, with the invention claimed in claim 2 which the smallest claim number attached out of inventions in claims in the same category that include all matters specifying the invention in claim 1, a special technical feature described as "A solar energy collector

wherein heat transfer from the absorber plate (1) to the heat collection tube (2) is performed by means of a heat conductive rubber (4) and the heat conductive rubber is a heat conductive rubber sheet (4) which tightly contacts with a periphery of a rear side portion of the heat collection tube (2) of which middle portion contacts the absorber plate (1) as well as of which both ends contacts the absorber plate (1)." has been found. Therefore the subject of the examination are the inventions claimed in claim 1 and claim 2, for which where the whether there is any special technical feature has already been determined, and the invention claimed in claims 4-2 which have the same or corresponding special technical feature with the found special technical feature.

(B) Decision of subject of the examination based on examination efficiency (See 4.2)

The inventions claimed in claims 4-1 are inventions which are in the same category that includes all matters specifying the invention in claim 1, and therefore are determined the subject of the examination.

The invention claimed in claims 3, 4-3 are also inventions which are in the same category that includes all matters specifying the invention in claim 1. However, compared with the technical feature added to claim 3, 4-3 in relation to the invention claimed in claim 1 relating to materials of heat conductive rubber, the technical feature of the invention claimed in claim1 relate to the structure of the solar energy collector, so there is low technical relevance between the two technical features.

In addition, the invention claimed in claim 3, 4-3 is not an invention that can be examined without substantially conducting additional prior art searches and making a determination as a result of the examination of the inventions claimed in claims 1, 2, 4-2 nor are there any other reason to decide that it is efficient to examine them together with the inventions claimed in claims 1, 2, 4-2.

Therefore, the inventions claimed in claim 1, 2, 4-1, 4-2 are subject of the examination, and the invention claimed in claim 3, 4-3 will be excluded from the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.

[How to Recite Multiple Dependent Form Claims]

For example, "claim 4-2" indicates an invention reciting claims 2 among the claims selectively recited in multiple dependent form type claim 4.



[Case 24] Decision of Subject of the Examination

Title of Invention

Sucker-type suspension structure

What is claimed is:

### [Claim 1]

A sucker-type suspension structure characterized by being provided with suckers (1) having a front part that can adhere to a smooth surface and a junction area (2), and stops (3) supported by said junction area.

[Claim 2]

A sucker-type suspension structure defined in claim 1 characterized by having a multiple of said suckers (1) and said stop (3) is supported by at least 2 of said junction areas (2) of the suckers of said multiple suckers (1).

[Claim 3]

A sucker-type suspension structure claimed in claim 2 characterized by having 3 said suckers (1), and said suckers (1) are located on the different vertex points of a triangle, and said stops (3) are supported by said joint areas (2) through a shaft-like part (4) that binds said joint areas (2) of 2 adjacent suckers (1).

[Claim 4]

A sucker-type suspension structure claimed in claim 2 characterized by having 4 said suckers (1), and said suckers (1) are located on the different vertex points of a quadrangle, and said stops (3) are supported by said joint areas (2) through a shaft-like part (4) that binds said joint areas (2) of 2 suckers (1) that are located diagonally on said quadrangle. [Claim 5]

A sucker-type suspension structure claimed in claim 3 or claim 4 characterized by attaching said stops (3) to said shaft-like part to rotate freely. [Claim 6]

A sucker-type suspension structure claimed in claim 1 characterized by having transformation detection means to detect the transformation of said suckers (1) and warning means that provides a predefined warning output when the transformation of said suckers (1) is detected by said transformation detection means.

## Overview of the description and drowings

The present invention concerns a sucker-type suspension structure for hanging an object on a stop attached to the structure and being fastened to a wall surface using suckers. There are conventional methods such as use of nails, adhesives, magnets and suckers to fasten an object onto a wall surface. However there are drawbacks with nails in that traces are left on the surface when they are removed. Also with adhesives there are drawbacks in that it is not suitable for repetitive use and with magnets the location of usage is limited

since they could only be fastened to a metal surface. A sucker can be used anywhere there is a smooth surface, can be used relatively anywhere without being selective, can be attached and removed easily and is also suitable for repetitive use. However there had been no inventions relating to suspension structures for hanging various objects such as pet leashes. Also there were drawbacks with suckers in that they could fall off from the wall surface abruptly and third parties could remove them intentionally.

The present invention provides a suspension structure that has joint areas in the center of the rear surface portion of the suckers that can be used without being selective about the place of usage, is easy to attach and remove and suitable for repetitive use. Also if multiple said suckers are used the load capacity of the present invention can be increased. Furthermore, the present invention is equipped with transformation detection means to detect the transformation of said suckers and warning means that provides a predefined warning output when the transformation of said suckers is detected by said transformation detection means, and notifies the user when the suckers are about to abruptly fall off the wall surface or is about to be intentionally removed by third parties, which leads to the prevention of the detachment or the theft of the suckers.



## [Result of prior art search]

The sucker-type suspension structure claimed in claim 1 and claim 2 lacks novelty according to Document 1. Moreover, the sucker-type suspension structure defined in claim 1 is commonly used.

### [Explanation]

(A) Decision of subject of the examination based on special technical features (See 4.1)

The inventions claimed in claim 1 and claim 2 lacks novelty and there are no special technical features.

Next, with the invention claimed in claim 3 which is in the same category that includes all matters specifying the invention in claim 2, a special technical feature described as "provided with 3 suckers having a front part that can adhere to a smooth surface and a back part with a junction area, said joint areas of two adjacent suckers are bound by a shaft-like part, and through said a shaft-like part a stop is supported by said junction area" has been found. Therefore the inventions claimed in claim  $1\sim$  claim 3 for which whether there is any special technical features has already been determined, and of the part of invention claimed in claim 5 that recites claim 3, which has the same or

corresponding said special technical features, are the subject of the examination.

(B) Decision of subject of the examination based on examination efficiency (See 4.2)

The invention claimed in claim 4 and of the invention claimed in claim 5 the invention that recites claim 4, are inventions which are in the same category that includes all matters specifying the invention in claim 1, and therefore can be determined as inventions that can be examined together efficiently and therefore are inventions that are the subject of the examination.

The invention claimed in claim 6 is also an invention which is in the same category that includes all matters specifying the invention in claim 1. However the sucker-type suspension structure in claim is, as aforementioned, commonly used and is considered as a common general knowledge. Therefore the technical feature of the invention claimed in claim 1 that can be determined by the technical features of the inventions claimed in claim 2, claim 3 and of the invention in claim 5 the invention reciting claim 3 is "it is equipped with multiple suckers that have rear surface portions with junction areas, and of said multiple suckers at least 2 suckers support the stops through said junction areas". On the other hand, the technical feature added to claim 6 in relation to the invention claimed in claim 1 is "transformation detection means to detect the transformation of said suckers and warning means that provides a predefined warning output when the transformation of said suckers is detected by said transformation detection means", and there is low technical relevance between the two technical features.

In addition, the invention claimed in claim 6 is not an invention that can be examined without substantially conducting additional prior art searches and making a determination as a result of the examination of the inventions claimed in claims  $1\sim3$ , and of the invention claimed in claim 5 the invention reciting claim 3, nor are there any other reason to decide that it is efficient to examine together the inventions claimed in claim  $1\sim3$  and of the invention claimed in claim 5 the invention reciting claim 3.

Therefore, the inventions claimed in claim  $1 \sim 5$  are subject of the examination, and the invention claimed in claim 6 will be excluded from the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



[Case 25] Decision of Subject of the Examination

Title of Invention Broccoli Plant

What is claimed is:

[Claim 1]

A broccoli plant having a flower head with flower buds, with an etiolating rate of the flower buds on the flower head being less than 15% in average, and at least 50% of the flower buds on the flower head not contacting each other.

[Claim 2]

The said broccoli plant as claimed in claim 1, whereof each flower head has at least six isolated flower buds.

[Claim 3]

The said broccoli plant as claimed in claim 1, whereof the mean length of flower buds is at least 10cm.

[Claim 4]

Seeds which can produce the broccoli plant as claimed in claim 1.

[Claim 5]

The broccoli plant as claimed in claim 1 which is wrapped with a container consisting of material X.

Overview of the description

The present invention relates to a broccoli plant. It is thought that a broccoli with a uniformly deep green flower head have the preference. Also, in response to the change of a consumption trend, not only globular heads of broccoli as before but also broccolis which are separated into several flower buds and then individually wrapped are recently sold as a simple convenience foods.

The purpose of this invention is, in response to these needs, to provide a broccoli plant including its seeds which is not virtually etiolated but have deep green flower buds, and with the flower buds on the flower head not densely growing but being separate each other so as to facilitate the separating work of flower buds. Besides, we aim at wrapping a broccoli with a container made of material X to prevent etiolating of the broccoli in distribution.

## [Result of prior art search]

The broccoli plant defined in claim 1 and claim 2 is described in Document 1 and is already well known.

### [Explanation]

(A) Decision of subject of the examination based on special technical features (See 4.1)

Both the invention claimed in claim 1 and the invention claimed in claim 2, which is the smallest number of claim in the same category of claims which have all the matters defining the invention claimed in claim 1, lack novelty of invention as shown in the document 1 and have no special technical features. Therefore the inventions claimed in claim 1 and claim 2 for which whether there is any special technical feature has already been determined, are the subject of the examination.

(B) Decision of subject of the examination based on examination efficiency (See 4.2)

The invention defined in claim 3, which is in the same category that includes all matters specifying the invention in claim 1, is added to the subjects of the examination. Also, the invention relating to claim 4 will be added to the subjects of the examination, as the examination of the invention claimed in claim 4 was possible without substantially conducting additional prior art searches and making a determination as a result of examining invention claimed in claim 1.

The invention relating to claim 5 is in the same category that includes all matters specifying the invention in claim 1. The technical feature of the claim 1 concerns the broccoli plant "the etiolating rate of flower buds on the flower head being less than 15% in average, and at least 50% of the flower buds on the flower head not contacting each other" itself. In contrast, the technical feature of the invention claimed in claim 5 which is added to the invention relating to claim 1 is a broccoli plant which "was wrapped with a container consisting of material X." Therefore, the technical relevance for those two claims is low. Furthermore, since "a container consisting of material X" is not well known art, it cannot be said that the invention claimed in claim 5 can be examined without substantially conducting additional prior art searches and making a determination as a result of examining inventions claimed in claims 1 and 2. Moreover, there are no other reasons that it is efficient to examine together the invention defined in claim 5 together with the inventions defined in claim 2.

Therefore, the inventions defined in claim 1~4 are subject of the examination, and the invention defined in claim 5 will be excluded from the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



[Case 26] Decision of Subject of the Examination

Title of Invention

Cell differentiation accelerant

What is claimed is:

## [Claim 1]

A plant cell differentiation accelerant with adventives root formation promoting effects of a plant.

## [Claim 2]

The plant cell differentiation accelerant as claimed in claim 1, characterized by containing a compound expressed in either one of general formulae (1) - (4). [Claim 3]

A culture medium for developing roots from the shoots of a plant containing the plant cell differentiation accelerant claimed in claim 1 or 2. [Claim 4]

The production method of the clone seedlings by cultivating plant shoots and making roots to be developed from said shoots of a plant under the presence of the plant cell differentiation accelerant claimed in claim 1 or 2.

## Overview of the description

This invention relates to a plant cell differentiation accelerant with adventives root formation promoting effects of a plant.

Particularly, the taking root of scions is promoted and effective production of clone seedlings is viable by using the compound described in either one of general formulae (1) - (4).

#### [Result of prior art search]

The plant cell differentiation accelerant of the invention claimed in claim 1 is a well-known art at the time of the application as described in the Documents 1-5.

## [Explanation]

(A) Decision of subject of the examination based on special technical features (See 4.1)

The invention of a plant cell differentiation accelerant in claim 1 is well-known art and does not have any special technical features.

The Invention claimed in claim 2 which is in the same category that include all matters specifying the invention in claim 1, is the invention of a plant cell differentiation accelerant containing a compound expressed in either one of general formula (1) - (4) (claims 2 (1) is a part of claim 2, which relates to an invention includes general formula (1), Parts related to general formula (2) (3) (4) are 2 (2), 2 (3), and 2 (4) respectively). The

invention relating to claim 2 (1) is not described in prior art documents, and a special technical feature was discovered in that it is using a chemical compound which has a partial structure X in the chemical structure, expressed as q general formula (1), as a plant cell differentiation accelerant.

And a compound expressed as general formulae (2) and (3) has the aforementioned partial structure X, and the invention claimed in claim 2 (2) and claim 2 (3) has the special technical feature which is the same as or corresponding to the aforementioned special technical feature.

In regard to the parts of invention claimed in claim 3 which recites claims 2 (1), (2), and (3), they have the special technical features which is the same as or corresponding to the aforementioned special technical feature. In regard to the invention claimed in claim 4, the parts that also recites claims 2 (1), (2), and (3) are the same.

Therefore, the claim 1 and the claim 2 (1), (2), and (3), and the parts of the claims 3 and 4 that recite the claim 2 (1), (2), and (3) (hereinafter "invention decided as the subjects of the examination in (A)")are subject of the examination on the basis of special technical features.

(B) Decision of subject of the examination based on examination efficiency (See 4.2)

The invention related to the claim 1 is a well-known art, and the technical feature of the invention claimed in claim 1 perceived by taking into consideration of other technical features of the invention decided as the subjects of the examination in (A), is the plant cell differentiation accelerant containing a chemical compound in the general formula (1), (2) or (3). In contrast, as to the invention claimed in claim 2 (4) which was not included in the subjects to be examined in (A), the technical feature added to the invention claimed in claim 1 a plant cell differentiation accelerant containing a compound of the general formula (4). Furthermore, the compound expressed in a general formula (4) does not share the common partial structure with the compound described in the general formulae (1), (2) or (3) and the corresponding technical relevance is low between the technical feature of the invention claimed in claim 1 perceived by taking into consideration of other technical features of the invention decided as the subjects of the examination in (A) and the technical feature added to the invention related to the claim 1 of the invention claimed in the claim 2 (4). And the invention claimed in 2(4) is not an invention that can be examined without substantially conducting additional prior art searches and making a determination as a result of the examination of the invention decided as the subjects of the examination in (A), nor are there any other reason to decide that it is efficient to examine together with the inventions that were decided as the subject of the examination in (A). As to the invention claimed in claims 3 and 4, the same applies to the part reciting claim 2(4).

On the other hand, as concerning the inventions claimed in claims 3 and 4, the part reciting claim 1 is another invention which adds, deletes or replace well-known art or commonly used art to the invention claimed in claim 1 which was determined as the subject

of the examination based on a specific technical feature and which does not generate any new effects,. Therefore, as a result of examining the invention decided as the subjects of the examination in (A), the part of the claims 3 and 4 reciting claim 1 shall be added to the subject of the examination, because said part can be examined without substantially conducting additional prior art searches and making a determination.

Therefore, the inventions claimed in claims 1, 2(1), 2(2), 2(3) and the part citing the claims 1, 2(1), 2(2), 2(3) in the invention claimed in claims 3 and 4 are subject of the examination, and the invention claimed in claim 2(4) and the part citing claim 2(4) in the inventions defined in claim 3 and claim 4 will be excluded from the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



\* Although the invention claimed in claim 4 formally quotes the claim 1, said invention is not in the same category as the invention claimed in claim 1

[Case 27] Decision of Subject of the Examination

Title of Invention

Optical communication device

## What is claimed is:

## [Claim 1]

An optical communication device, comprising: a visible light emitting portion for emitting visible light; an infrared light emitting portion for emitting infrared light; a photometry portion for measuring light intensity of light around the optical communication device; a switching portion for switching a mode between a transmission mode of a data signal transmitted by the infrared light and a transmission mode of the data signal transmitted by the visible light according to a measurement result of the photometry portion; a transmitting portion for transmitting a intensity-modulated optical data signal by controlling emission of either one of the visible light or the infrared light; and the said visible light emitting portion is illuminating lamp.

[Claim 2]

The optical communication device according to claim 1, further comprising: a location information memory portion for storing memory of location information relating to latitude and longitude at the said optical communication device installed; an information acquisition portion for acquiring information of the time of sunrise and sunset of the day based on the said location information; and the said switching portion switch the said transmission mode based on the measured result of the said photometry portion and the information of the time of sunrise and sunset acquiring information portion acquisition portion acquisition portion for acquiring information acquired by the said information acquisition portion acquisition portion acquisition because the said sunset acquired by the said information acquisition portion acquisition portion

# [Claim 3]

The optical communication device according to claim 1, further comprising: a location information memory portion for storing memory of location information relating to latitude and longitude at the said optical communication device installed; an information acquisition portion for acquiring information of the solar position of the day based on the location information; and the said switching portion switch the said transmission mode based on the measured result of the said photometry portion and the information of the solar position of the day acquired by the said information acquisition position. [Claim 4]

The optical communication device according to claim 1, further comprising: a road traffic information receiving portion for receiving the road traffic information around the said optical communication device installed; a dimming control portion for dimming emission of the said visible light emitting portion in case where the said visible light emitting portion is emitting at the time of the amount of traffic by the said road traffic information is lower than predetermined value.

[Claim 5]

The optical communication device according to claim 1, further comprising: a satellite communication portion for receiving a satellite signal to obtain a urgency data signal; an urgency signal transmission control portion for interrupting transmission of a data signal currently in transmission and for transmitting the satellite signal repetitively for a predetermined period of time when the urgency data signal is received.

## Overview of the description and drowings

The present invention is optical communication device which provides a variety of information to mobile communication terminals like car, and relates to the optical communications device which makes efficient use of lighting facility installed on the road and makes electric power saving possible. The lighting facility measures light intensity by a photometer and, when the light intensity becomes a value equal to or less than a predetermined light intensity, the illuminating lamp is turned on. The present optical communication device realizes electric power saving by transmitting optical data by modulating the intensity of infrared light in the daytime, illuminating lamp is lucent, and for transmitting a data signal by modulating intensity of visible light in the nighttime, illuminating lamp is not lucent,.

Moreover, the optical communication device of the present invention acquires sunrise and sunset time information from a server based on the installed position information (information about latitude and longitude), controls lighting and extinction of the illuminating lamp by using one or both of intensity of light measured by the photometer and the information of the time of sunrise and sunset. It is possible to use the solar position information instead of the said sunrise and sunset time information.

Further, the optical communication device of the present information comprises a road traffic information receiving portion for receiving the road traffic information around the said optical communication device installed and a dimming control portion for dimming emission of the said visible light emitting portion in case where the said visible light emitting portion is emitting at the time of the amount of traffic by the said road traffic information during nighttime.

Further, the optical communication device of the present invention has a function of transmitting urgency disaster information transmitted from a disaster control center via a satellite to a mobile terminal. The optical communication device repetitively transmits the data to a mobile terminal in preference to the other data in a case where the urgency of the data is received via the satellite.



## Fig. 2

Location		Jan. 1	Jan. 2
Longitude XXX Latitude YYY	Sunrise	6:50	6:50
	Sunset	16:38	16:39
Longitude XXY Latitude YYZ	Sunrise	7:00	7:00
	Sunset	16:58	16:58
Longitude XYY Latitude YZY	Sunrise	6:45	6:46
	Sunset	16:15	16:16

## [Result of prior art search]

The optical communication device of the inventions according to claims 1 is disclosed in Document 1 and thus is a publicly known art.

## [Explanation]

(A) Decision of subject of the examination based on special technical features (See 4.1)

The invention claimed in claim 1 lacks novelty according to Document 1 and does

not have any special technical features.

Next, with the invention claimed in claim 2 which the smallest claim number attached out of inventions in claims in the same category that include all matters specifying the invention in claim 1, a special technical feature described as "Optical communication device comprises: an information acquisition portion for acquiring information of the time of sunrise and sunset of the day based on the location information relating to latitude and longitude at the said optical communication device installed ; a switching portion switch the said transmission mode based on the measured result of the said photometry portion and the information of the time of sunrise and sunset acquired by the said information acquisition portion " is found. Therefore, the invention claimed in claims 1 and 2 shall become the subject of the examination as the invention for which whether there is any special technical feature has already been determined.

(B) Decision of subject of the examination based on examination efficiency (See 4.2)

The invention claimed in claim 3 is the invention which is in the same category that includes all matters specifying the invention in claim 1, and therefore can be determined as inventions that can be examined together effectively and therefore it becomes the subject of the examination.

The invention claimed in claim 4 is an invention in the same category a that includes all matters specifying the invention first mentioned in claim 1. However, compared with the technical feature added to claim 4 in relation to the invention claimed in claim 1 is " a dimming control portion for dimming emission of the said visible light emitting portion in case where the said visible light emitting portion is emitting at the time of the amount of traffic by the said road traffic information is lower than predetermined value", the technical feature of the invention claimed in claim1 is "An optical communication device comprising a switching portion for switching a mode between a transmission mode of a data signal transmitted by the infrared light and a transmission mode of the data signal transmitted by the visible light according to a measurement result of the photometry portion; and a transmitting portion for transmitting a intensity-modulated optical data signal by controlling emission of either one of the visible light or the infrared light", so there is low technical relevance between the two technical features.

The invention claimed in claim 5 is an invention in the same category that includes all matters specifying the invention first mentioned in claim 1. However, a concrete problem understood from the technical feature added (a satellite communication portion for receiving a satellite signal to obtain a urgency data signal, an urgency signal transmission control portion for interrupting transmission of a data signal currently in transmission and for transmitting the satellite signal repetitively for a predetermined period of time when the urgency data signal is received) in claim 5 in relation to the invention claimed in claim 1 is "to send the urgency data signal for certain", and it has little relevance with the problem of the invention claimed in claim1, "to realizes electric power saving in optical communication device." Also, technical feature added by claim 5 has low technical relevance with technical feature of the invention claimed in claim 1.

In addition, the invention claimed in claims 4,5 is not an invention that can be examined without substantially conducting additional prior art searches and making a determination as a result of the examination of the inventions claimed in claims 1,2, nor are there any other reason to decide that it is efficient to examine together the inventions claimed in claims 1,2.

Therefore, the inventions claimed in claim 1-3 are subject of the examination, and the invention claimed in claim 4-5 will be excluded from the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.


[Case 28] Decision of Subject of the Examination

Title of Invention Schedule control device

What is claimed is:

### [Claim 1]

A schedule control device, comprising, a display means for displaying a schedule table region and a software component; an input means for designating a predetermined position on a GUI screen; a shifting means for causing software component to move based on an instruction of the input means; a detection means for detecting overlapping between the schedule table region and the software component; the said input means is a touch-pad. (See Fig 1)

[Claim 2]

The schedule control device according to claim 1, wherein the said display means displays the software components, and components which are often used based on the frequency of use are displayed in different colors than other software components. [Claim 3]

The schedule control device according to claim 1, wherein the said display means displays the software components, and components which are often used based on the frequency of use are displayed closer to the schedule table region than other software components.

[Claim 4]

The schedule control device according to claim 1, wherein the said touch pad comprises polyethylene terephthalate (PET) resin as a material of a surface protection sheet.

[Claim 5]

The schedule control device according to claim 1, wherein the said touch pad is optical sensor type touch pad which comprises X-type compound semiconductor as a material of an optical absorbing layer and high resistance buffer layer above the said optical absorbing layer. (See Fig 2)

### [Claim 6]

The schedule control device according to claim 1, comprising: an electronic program table obtaining unit; and a transmission unit for transmitting a picture recording program signal in a case where a kind of the software component overlapped on the schedule table region is a part of the electronic program table.

[Claim 7]

The computer program for making the computer function as causing software component displayed in the displayed means to move based on an instruction of the input means and a detection means for detecting overlapping between the schedule table region and the software component.

Overview of the description and drowings

The present invention relates to a schedule control device including a simplified schedule processing unit. The schedule control device of the present invention includes an input means for designating a predetermined position on the GUI screen and a GUI display means for displaying a schedule table region, a member selection part, and a calendar part, wherein a software component such as a division and a name as the member selection part and a software component indicating month and day as a calendar part are displayed in a movable manner by the instruction from the input mean, and processed according to a kind of software component overlapped on the schedule table region.

For example, in a case where a user desires to display schedules of "K" and "S" on April 13th (today) on the schedule table region, the user selects the software component of an "ES group" from the member selection part to move it to overlap on the schedule table region. The detection means detects that the software component indicating a member of the member selection part is overlapped on the schedule table region and notifies a result thereof to the processing unit. In the processing unit, the schedules of "K" and "S" are displayed on the schedule table region.

Moreover, in order to make simpler selection and movement of the software component of the present invention, the number of times that each software component is laid on top of the schedule table region, i.e., frequency in use, is memorized, and, as for frequently-used software components, it is desirable to display in a different colors or closer to the schedule table region.

The input means of the present invention is constituted from a touchpad of the electric capacity system used with a common touchpad, and polyethylene terephthalate (PET) resin etc, which are rich in flexibility suitable for operatively, are used for the material of the protection sheet of the surface. In order to improve the operatively of an input means more, it is also possible to constitute an input means from a touchpad of the optical sensor type touch pad which comprises X-type compound semiconductor. X-type compound semiconductor is developed as an object for the optical absorption layers of the optical sensor for touchpad, its optical absorption coefficient is higher than the silicon which is used conventionally, and also it is preparing a high resistance buffer layer on an optical absorption layer, the sensitivity of an optical sensor improves.

The present schedule control device can also be used as a remote controller of a video recording device. In other words, the schedule control device is provided with the electronic program table obtaining unit and the transmission unit for transmitting a picture recording program signal in a case where a kind of software component overlapped with the schedule table region is the electronic program table part, thereby, in a case where the software component corresponding to a program the user desires to reserve is overlapped on the schedule table region, displaying a reserved time on the schedule table region as



well as causing the transmission unit to transmit the reservation signal of the video.



[Result of prior art search]

The schedule control device of the invention according to claim 1 is disclosed in Document 1 and thus is a publicly known art.

#### [Explanation]

(A) Decision of subject of the examination based on special technical features (See 4.1)

The invention claimed in claim 1 lacks novelty according to Document 1 and does not have any special technical features.

Next, with the invention claimed in claim 2 which the smallest claim number attached out of inventions in claims in the same category that include all matters specifying the invention in claim 1, a special technical feature described as "A schedule control

device, comprising a display means for displaying a schedule table region and a software component; an input means for designating a predetermined position on a GUI screen; a shifting means for causing software component to move based on an instruction of the input means; a detection means for detecting overlapping between the schedule table region and the software component; the said display means displays the software components, and components which are often used based on the frequency of use, are displayed in different colors than other software components." is found. Therefore, the invention claimed in claims 1 and 2 shall become the subject of the examination as the invention for which whether there is any special technical feature has already been determined.

(B) Decision of subject of the examination based on examination efficiency (See 4.2)

The invention claimed in claim 3, 4 is the invention which is in the same category that includes all matters specifying the invention in claim 1, and therefore can be determined as inventions that can be examined together effectively and therefore it becomes the subject of the examination.

In addition, the technical feature added to claim 4 is "the said touch pad comprises polyethylene terephthalate (PET) resin as a material of a surface protection sheet" and it is a invention which added well-known or commonly used art with respect to the invention of claim 1, which does not produce any new effects. Therefore, the invention claimed in claims 4 can be added as the subject of the examination as an invention that can be examined without substantially conducting additional prior art searches and making a determination as a result of the examination of the inventions claimed in claims 1.

The invention claimed in claim 5 is the invention which is in the same category that includes all matters specifying the invention in claim 1. However, compared with the technical feature added to claim 5 in relation to the invention claimed in claim 1 is "the said touch pad is optical sensor type touch pad which comprises X-type compound semiconductor as a material of an optical absorbing layer and high resistance buffer layer above the said optical absorbing layer", the technical feature of the invention claimed in claim1 relates to the operational tool of the schedule control device, so there is little technical relevance between the two technical features.

In addition, the invention claimed in claims 5 is not an invention that can be examined without substantially conducting additional prior art searches and making a determination as a result of the examination of the inventions claimed in claims 1,2 because "optical sensor type touch pad which comprises X-type compound semiconductor as a material of an optical absorbing layer and high resistance buffer layer above the said optical absorbing layer" is not well-known art nor are there any other reason to decide that it is efficient to examine together the inventions claimed in claims 1,2.

The invention claimed in claim 6 is the invention which is in the same category that includes all matters specifying the invention in claim 1. However, while the problem of the invention claimed in claim 1 is facilitation of operating of schedule device, the specific

problem the invention is trying to solve that can be understood from the additional technical feature of the invention claimed in claim 6 is realizing programmed recording in schedule control device, so there is little relevance between them. In addition, the additional technical feature of the invention claimed in claim 6 relates to programmed recording by using the electronic program table, so there is low technical relevance between the two technical features.

In addition, the invention claimed in claims 6 is not an invention for which an examination may be made without substantially conducting additional prior art searches and making a determination as a result of the examination of the inventions claimed in claims 1,2, nor are there any other reason to decide that it is efficient to examine together the inventions claimed in claims 1,2.

The invention claimed in claim 7 is the invention which that differ only in terms of expression from the invention claimed in claim1, so the invention claimed in claim7 is subject of the examination.

Therefore, the inventions claimed in claim 1,2,3,4,7 are subject of the examination, and the invention claimed in claim 5,6 will be excluded from the subject of the examination. Since there are claims which are not the subject of the examination, notice of reasons for refusal on the grounds of violation of the requirements of unity of invention is notified.



\* Shaded inventions should be the subjects of the examination.

[Case 29] Decision of Subject of the Examination

Title of Invention

A learning system

What is claimed is:

[Claim 1]

A pen, comprising a detecting means for detecting the use situation of the pen, a judging means for judging the frequency of use of said pen based on the use situation of said pen, and a vibrating control means for vibrating said pen in accordance with the frequency of use judged by said judging means.

[Claim 2]

A pen disclosed in claim 1, characterized in that said detecting means detects the angular velocity of said pen by writing operation.

[Claim 3]

A pen disclosed in claim 1 or claim 2, characterized in that said detecting means detects the angular speed of said pen by writing operation with a gyro sensor.

# [Claim 4]

A server which can communicate with one or more pens, comprising:

an acquiring means for acquiring data on the use situation of each of said pens,

a judging means for judging the frequency of use of said pen based on the use situation of said pen, and

a vibration control means for causing said pen make vibration operation according to the frequency of use specified by said judging means.

Overview of the description

In the present invention, a pressure sensor or a gyro sensor that detects the use situation of the pen (whether or not the pupil learns using the pen) is provided on the pen used by the pupil and, if the value obtained from the sensor is not higher than the predetermined value (if the frequency of use is low), it is judged that the pupil does not learn and the pen is vibrated. By doing so, a pupil who does not learn is urged to learn. Judging whether or not the pupil learns from the result obtained by the pressure sensor or the gyro sensor, and controlling for causing the pen vibrate when judged that the pupil is not learning may be carried out with the pen or through network from a server which can communicate with the pen.



[Result of prior art search]

The pen claimed in claim 1 is stated in document 1, and already publicly known. Document 1 states a use situation detecting means for detecting the pressure applied to the tip of the pen by writing operation, but does not state any use situation detecting means for detecting the angular velocity of the pen. A system in which a server that obtains information on the pen through a network controls the pen through a network is well-known art as of the filing of the claimed invention (By the prior art search for claim 1, an evidence proving that such system is well-known art has been discovered).

#### [Explanation]

(A) Decision of subject of the examination based on special technical features (Refer to 4.1.)

The invention claimed in claim 1 lacks novelty over document 1 and has no special technical feature.

Next, a special technical feature, "detects the angular velocity of said pen by writing operation" is found in the invention claimed in claim 2 belonging to the same category as and comprising all matters specifying the invention claimed in claim 1. Therefore, the inventions claimed in claims 1 and 2, for which existence of special technical feature has been determined, and the invention claimed in claim 3 having the special technical feature

same as or corresponding to the special technical feature should be the subjects of the examination.

(B) Decision of subject of the examination based on examination efficiency (Refer to 4.2(2))

As a result of examination of the inventions that were judged to be the subjects of the examination in (A) above, since the invention claimed in claim 4 is an invention which can be examined without any necessity of substantially additional prior art search and determination, it should be added to the subjects of the examination.



Inventions which should be the subjects of the examination under 4.1



Invention added to the subjects of the examination under 4.2(2)

\* Shaded inventions should be the subjects of the examination.

[Case 30] Decision of Subject of the Examination

## Title of Invention

A receiving terminal and a distribution server

What is claimed is:

## [Claim 1]

A receiving terminal in a delivery system for delivering hierarchical coding data through a network, comprising a receiving means for receiving packetized hierarchical coding data from the delivery server, a calculating means for calculating receiving condition information of each hierarchy based on the received packet, a preparing means for preparing aggregated response information by aggregating receiving condition information of each hierarchy, and a notifying means for notifying said aggregated response information to said delivery server.

[Claim 2]

A receiving terminal disclosed in claim 1 characterized in that said calculating means calculates packet loss rate as said receiving condition information, and said preparing means causes the average value of packet loss rate of each hierarchy calculated by said calculating means as said aggregated response information.

[Claim 3]

A receiving terminal disclosed in claim 2 characterized in that said preparing means calculates the average value of the packet loss rate of each hierarchy by weighting by hierarchy.

## [Claim 4]

A receiving terminal disclosed in claim 1 characterized in that said receiving terminal is further provided with a measuring means for measuring the processing load of said receiving terminal, and said notifying means notifies information on the processing load of said receiving terminal measured by said measuring means to said delivery server. [Claim 5]

A delivery server in a delivery system for delivering hierarchical coding data through a network, comprising a receiving means for receiving aggregated response information in which receiving condition information of each hierarchy is aggregated from the receiving terminal, an estimating means for estimating the transmission rate suitable for said receiving terminal based on said aggregated response information, a determining means for determining the combination of hierarchies for hierarchical coding data to be transmitted to said receiving terminal based on the transmission rate estimated by said estimating means, and a transmitting means for packetizing hierarchical coding data of the combination of hierarchies determined by said determining means and transmitting to said receiving terminal.

[Claim 6]

A delivering server disclosed in claim 5 characterized in that said determining means determines the combination of hierarchies of said hierarchical coding data based on information on the processing load of said receiving terminal received from said receiving terminal.

#### Overview of the description

Hierarchy coding is used frequently as a coding method when delivering contents through networks. In hierarchy coding, coding data of contents is hierarchized and, by changing the combination of hierarchies, coding data suited to the network condition, type of receiving terminal, user attribute, etc. can be delivered.

Heretofore, a method in which a receiving terminal notifies information such as packet loss rate as response information to a delivery server, and the delivery server controls the transmission rate by estimating the transmission rate suitable for the receiving terminal based on received response information is known. When this transmission rate controlling method is applied to a delivery system for delivering hierarchical coding data, there is a problem that the processing load of the delivering server becomes large because the receiving terminal notifies response information for each hierarchy and the delivering server needs to process response information for each hierarchy.

In particular, if the receiving terminal is a mobile terminal, etc., since it is necessary to lessen the processing load of the receiving terminal while receiving contents, and, for that purpose, it is desirable that the delivering server controls the transmission rate taking fluctuation of the processing load of the receiving terminal in use for receiving contents into consideration.

If the present invention is used in the delivery system delivering hierarchical coding data through a network, the load of the delivery server to process response information can be lessened by decreasing the number of response information the receiving terminal notifies to the delivering server. In addition, the processing load of the receiving terminal in service of receiving contents can be lessened if the delivery server determines the combination of hierarchies of hierarchical coding data taking the processing load of the receiving terminal into consideration.

### [Result of prior art search]

Inventions claimed in claims 1, 2, and 5 are stated in document 1 and publicly known.

Matters specifying the invention of the inventions claimed in claims 4 and 6 are disclosed in document 2 and publicly known.

### [Explanation]

(A) Decision of subject of the examination based on special technical feature (Refer to 4.1.)

The inventions claimed in claims 1 and 2 lack novelty over document 1 and have no special technical feature.

Next, since a special technical feature, "calculates the average value of the packet loss rate of each hierarchy by weighting by hierarchy" is found in the invention claimed in claim 3 belonging to the same category as and comprising all matters specifying the invention claimed in claim 2, the inventions claimed in claims 1 to 3, for which existence of special technical feature has been determined should be the subjects of the examination.

(B) Decision of subject of the examination based on examination efficiency (Refer to 4.2.)

Since the invention claimed in claim 4 is an invention of the same category containing all matters specifying the invention of claim 1, it should be added to the subjects of the examination as an invention for which it is efficient to examine together.

As a result of examination of the inventions that were judged to be the subjects of the examination in (A) above, since the invention claimed in claim 5 is an invention which can be examined without any necessity of substantially additional prior art search and determination, it should be added to the subjects of the examination.

As a result of examination of the invention claimed in claim 4 added to the subjects of the examination, document 2 in which matters specifying the invention of the inventions claimed in claims 4 and 6 were stated was found. Therefore, as a result of examination of the inventions claimed in claims 4 and 5, the invention claimed in claim 6 is an invention which can be examined without any necessity of substantially additional prior art search and determination, it should be added to the subjects of the examination.



\* Shaded inventions should be the subjects of the examination.

[Case 31] Product and Product producing the same

Title of Invention

Structure of anti-slipping device of blind nut

What is claimed is:

## [Claim 1]

Anti-slipping device of blind nut (10) consisting of a hollow cylinder (36) fabricated of a material capable of plastic deformation, having the female thread (12) on its inside front end and a flange (14) on its back end; wherein a groove (24) cut in the direction of the outside of the radius in the surface of the mounting hole (22) of the part to be fastened (16); and the mid-section of the blind nut (34) expanding in the outside direction of the radius including the said groove (24), fit and thus preventing the slippage of the blind nut (10). (See Figures 1 and 2)

## [Claim 2]

The tool for forming the mounting hole (22) with anti-slippage groove, comprising a guide portion (26) of the blind nut, which is inserted into the pre-drilled mounting hole of the piece to be fastened, a flange (30) able to be inserted in said mounting hole (22) provided at the rear side of said guide (26), and an edge (32) affixed at an angle of 15-400 and protruding in the outside direction of the radius of the edge of the flange. (See Figures 3 and 4)

### Overview of the description and drowings

This invention concerns the structure of anti-slippage device of blind nuts when a large torque is applied to the piece being held by the blind nut.

The conventional blind nut was tightened by means of an impact wrench and a like so that a large torque is applied to the blind nut and crimping becomes loose, the blind nut turned.

This invention combines the grooves in the mounting hole and the anti-slippage structure of the blind nut in order to prevent slippage, and the tool in Figures 3 and 4 is appropriate for forming the grooves in the mounting hole (22).



### [Explanation]

The invention claimed in claim 2's special technical feature is "edge (32) affixed at an angle of 15-400 and protruding in the outside direction of the radius of the edge of the flange" and the invention claimed in claim 2's special technical feature is "a groove (24) cut in the direction of the outside of the radius in the surface of the mounting hole (22) of the part to be fastened (16)". The special technical feature of the claim 2 inevitably provides change to the special technical feature of the claim 1. Therefore, the tool of claim 2 is appropriate to produce the Anti-slipping device of claim 1 and the inventions have the same or corresponding special technical features and satisfy the requirements of unity of invention. [Case 32] Product and Product producing the same

### Title of Invention

Ignition trigger pulse generator and magnetizer thereof

What is claimed is:

### [Claim 1]

An ignition trigger pulse generator mounted on a drive shaft of an internal combustion engine, comprising: a pick-up coil device (13) and a ring-shaped permanent magnet (18): wherein the permanent magnet (18) includes a first magnetized component and a second magnetized component which are separated each other in an axis direction; and wherein each of the first magnetized component and the second magnetized component forms a sharp magnetic flux reversal area (24), (25), respectively, between one of the components and a semi-circumferential portion magnetized in a radial direction at a constant magnetic level of one direction and between the other one of the components and a semi-circumferential portion magnetized component and the second magnetic level in a radial direction at a constant magnetic level of the first magnetized component and the second magnetized component and the second magnetized in a radial direction at a constant magnetic level of one direction and between the other one of the components and a semi-circumferential portion magnetized component and the second magnetized component are magnetized in a radial direction at a constant magnetic level first magnetized component and the second magnetized component are magnetized in the opposite directions each other. (See, Figs. 1 and 2) [Claim 2]

A magnetizer (31), (32) of a ring-shaped permanent magnet (18) constituting an ignition trigger pulse flux generator for an internal combustion engine, the magnetizer comprising: a pole part (33) including a first pole and a second pole arranged side by side in an axis direction so as to contact a half of an outer periphery of the ring-shaped permanent magnet, the pole part having a U-shaped cross section; a magnetizing coil (37) disposed along an internal and external surface of the pole part (33); and a power supply for supplying selected polar and current of a constant value to the coil (37). (See, Fig. 3)

### Overview of the description and drowings

The invention relates to a generator for supplying a trigger pulse to a condenser discharge ignition system for 2-cylinder engine in an outboard motor having a generator mounted on the driving shaft, wherein two components separated in an axis direction of the ring-shaped permanent magnet and two components opposing to each other across a diameter of the ring-shaped permanent magnet are magnetized so as to have opposite polarities in a radial direction of the magnet to form a magnetic flux reversal area (24), (25), respectively, between unlike poles, thereby obtaining a steep trigger pulse from the pick-up coil. The magnetizer to be used therein is configured to polarize the ring-shaped permanent magnet so as to have the above described polar and is used after the ring-shaped permanent magnet is assembled with the drive shaft.

The assembly of the pulse generator is conventionally coupled to a lower end of the generator, so that a long engine shaft is required. As a result thereof, the generator becomes

larger as well as the generator could not obtain the steep trigger pulse. Also, during assembly of the generator, if the permanent magnet is polarized, the permanent magnet absorbs the other parts to invite degradation of its workability.



[Explanation]

The magnetizer in the invention claimed in claim 2 is used in polarizing the ring-shaped permanent magnet of the pulse generator after the pulse generator is assembled in the invention claimed in claim 1. Thus, the magnetizer of claim 2 is suitable for manufacturing the pulse generator of claim 1. Therefore, the inventions of claim 1 and 2 have the same or corresponding special technical features and satisfy the requirements of unity of invention.

[Case 33] Product and Product producing the same

Title of Invention

Antibiotic A/16686 and microorganisms producing the same

What is claimed is:

[Claim 1]

An antibiotic A/16686 in a form of hydrochloride which is characterized in that:

A) the antibiotic is white crystal substance having the melting point of  $224-226^{\circ}C$ ; ...

C) the antibiotic has an approximate element composition of 51.73% carbon, 6.34 % of hydrogen, 9.96% nitrogen, 5.84% chlorine (total content), 4.74% chlorine ion, and 1% of the remainder; ...

F) the antibiotic has specific rotary power of [ $\alpha$ ]D<sup>24</sup>=+49.7°; ...

J) after hydrolyzing the antibiotic in 6 N of hydrochloric acid at  $110^{\circ}$ C for 6 hours, at least ornithine and aspartic acid are present in the antibiotic as determined by amino acid analysis; ....

[Claim 2]

A microorganism belonging to *Actinoplanes philippinensis* that is capable of producing the antibiotic A/16686 in glucose-asparagine agar without producing sporangia.

## Overview of the description

The present invention relates to an antibiotic A/16686 having antibacterial activity, and to a new microorganism of *Actinoplanes philippinensis* that is capable of producing the antibiotic A/16686.

The antibiotic A/16686 of the present invention is a new glycopeptide antibiotic. This antibiotic is produced by culturing microorganism (NRRL5462) belonging to *Actinoplanes philippinensis*.

### [Explanation]

The microorganism of the invention claimed in claim 2 is suitable for producing the antibiotic of the invention claimed in claim 1. Therefore, the inventions claimed in Claims 1 and 2 have the same or corresponding special technical feature.

[Case 34] Product and Product producing the same

### Title of Invention

Keyboard switch and manufacturing method thereof

What is claimed is:

#### [Claim 1]

A keyboard switch, comprising: an insulated portion (2) made of an elastomer resin protruding from a surface of a metal sheet (1) on a predetermined portion of the surface of the metal sheet (1); a flat electrode (4) which is a portion other than the insulated portion (2) formed into an electrical contact member (3); and a substrate (5) provided with a membrane electrode (6) at a position opposing to the electrical contact member (3); wherein the flat electrode (4) and the substrate (5) are formed into a piece of layer so as to be faced to each other. (See, Fig. 1)

#### [Claim 2]

A keyboard switch, comprising: an insulated portion (12) made of an elastmer resin charged into a recess portion of a predetermined portion on a surface of a metal sheet (11) to protrude from a surface of the metal sheet (11); a flat electrode (14) which is a portion other than the insulated portion (12) formed into an electrical contact member (13); and a substrate (15) provided with a membrane electrode (16) at a position opposing to the electrical contact member (13); wherein the flat electrode (14) and the substrate (15) are formed into a piece of layer so as to be faced to each other. (See, Fig. 3) [Claim 3]

A method for manufacturing a keyboard switch, comprising: forming a masking layer (8) made of a material without affinity to an elastmer resin on a surface of a metal sheet (1); adhering an elastomer resin on the surface of the exposing metal sheet (1); removing the masking layer (8) to form thereon a flat electrode (4) including a predetermined protruding insulated portion (2) made of the elastomer resin and an electrical contact member (3) other than the insulated portion (2); and wherein the flat electrode (4) and the substrate (5) having the membrane electrode (6) are layered into one piece such that the electrical contact member (3) and the membrane electrode (6) are faced to each other. (See, Figs. 1 and 2)

### [Claim 4]

A method for manufacturing a keyboard switch, comprising: forming a masking layer (18) made of a material without affinity to an elastomer resin on a surface of a metal sheet (11); providing a recess portion on a surface of the exposed metal sheet (11) by etching; charging the elastomer resin into the recess portion until the elastomer resin reaches a surface of the masking layer (18); and removing the masking layer (18) to form thereon a flat electrode (14) including a predetermined protruding insulated portion (12) made of the elastomer resin and an electrical contact member (13) other than the insulated

portion; wherein the flat electrode (14) and a substrate (15) including a membrane electrode (16) are layered into one piece such that an electrical contact member (13) and the membrane electrode (16) are faced to each other. (See, Figs. 3 and 4)

### Overview of the description and drowings

The present invention relates to a keyboard switch and a method for manufacturing the same.

Since the conventional keyboard switch using press buttons has a complicated structure, the manufacturing thereof requires many steps and further the resulting keyboard switch has a relatively large volume, particularly, is relatively thick. Therefore, the conventional keyboard switch is not suitable as a keyboard switch for an electric calculator having a feature of weight saving.

The conventional keyboard switch using a film such as a piezoelectric polymer film and a film provided with electrodes with conductive ink has a simple structure and is thin; however, the piezoelectric polymer film or the conductive ink has a large resistance, so that a contact resistance of the switch becomes larger. Consequently, such films are not suitable to be used in a case of applying a heavy current.

The keyboard switch according to the present invention is directed to a keyboard switch having a structure that a light press of an upper surface of a flat electrode with a finger upon using thereof compresses an elastomer resin portion corresponding to a portion immediately below the finger to allow the electrical conducting member (3) to contact the membrane electrode (6), thereby allowing the switch to operate.



[Explanation]

The "insulated portion made of an elastomer resin protruding from a surface of a metal sheet" is common to inventions claimed in claim 1 and claim 2. The "insulated portion made of the elastomer resin protruding from the surface of the metal sheet" makes a contribution to the prior art in which the elastormer resin portion is compressed to allow the electrical contact portion (3) to contact the membrane electrode (6) to cause the switch to operate, thereby achieving light weighting of the keyboard switch. Therefore, the inventions claimed in claims 1 and 2 have the same special technical feature.

The manufacturing method according to claims 3 and 4 involves inevitable modification to the "insulated portion made of an elastomer resin protruding from a surface of a metal sheet" as the special technical feature of claims 1. Therefore, the manufacturing methods are suitable for manufacturing the keyboard switches according to claims 1.

Therefore, the inventions of claim 1-4 have the same or corresponding special technical features and satisfy the requirements of unity of invention.

[Case 35] Product and Product producing the same

### Title of Invention

Rotary solvent extirpation equipment and process of field assembly of cell assembly of rotor of the same

What is claimed is:

### [Claim 1]

Rotary solvent extirpation equipment including a cell assembly (16) which includes a plurality of upper support beams (12) and lower support beams (14) extending in a radial direction with respect to a rotor shaft and cells of a rotor, each being formed between the neighboring 4 upper and lower beams, the cell assembly (16) being characterized in that:

(a) side walls (20) including upper and lower positioning elements (40) and inside and outside positioning elements (42, 44) are held by the upper and lower support beams;

(b) inside walls (18) are affixed inbetween the sidewalls;

(c) outside walls (22) are affixed inbetween the sidewalls; and

(d) gable structures (60) are placed on the opposing sidewalls of the neighboring cells. (See Figures 2, 3, and 4)

## [Claim 2]

A process of field assembly of a cell assembly (16) of a rotor of rotary solvent extirpation equipment having upper support beams (12) and lower support beams (14) extending in a radial direction with respect to a rotor shaft and cells of a rotor, each being formed between the neighboring 4 upper and lower beams, the process comprising:

(a) positioning side walls (20) with inside and outside positioning elements (42, 44)on the upper and lower support beams by means of upper and lower positioning elements(40) to secure the side walls (20) thereon;

(b) securing inside walls (18) between side walls by means of the inside positioning elements of the sidewalls; and

(c) securing out side walls (22) between side walls by means of outside positioning elements of the sidewalls.

### Overview of the description and drowings

This invention relates to rotary solvent extirpation equipment and a process of a field assembly of a cell assembly of a rotor of the rotary solvent extirpation equipment. More specifically, the invention relates to modifications of the extirpation equipment equipped with the cell assembly of the rotor made of inside walls, outside walls, and side walls for the purpose of shipping at any time to a working field for field assembly and the process of the field assembly of the cell assembly of the rotor of the extirpation equipment. The process of the field assembly of the present invention enables an easy and secure field assembly of the cells to the rotary solvent extirpation equipment at the working field. The gable structures prevent solvents from dripping inbetween the neighboring cells and facilitates solvents to flow into the neighboring cells, and the process of field assembly of this invention is applicable also to a rotary solvent extirpation equipment of the type other than that having the gable structure.



Fig. 1 Conceptual diagram of the rotary solvent extirpation equipment



Fig. 3 Elevation view of the cell assembly



Fig. 4 End view seen from the A direction in Fig.2

[Explanation]

The process of the filed assembly of claim 2 is optimum to manufacturing of the rotary solvent extirpation equipment of claim 1. Therefore, the inventions of claim 1 and 2 have the same or corresponding special technical features and satisfy the requirements of unity of invention.

[Case 36] Product and Method using the same, and Product and Product exclusively utilizing specific feature of the same

#### Title of Invention

Cyclopropane carboxylate derivatives, insecticides containing the same, and methods for killing insects using the same

What is claimed is

[Claim 1]

A cyclopropane carboxylate derivative represented by general formula (1),



wherein X represents halogen.

[Claim 2]

An insecticide containing at least one compound according to claim 1 as an active ingredient.

[Claim 3]

A method for killing insects comprising a step of applying an effective dose of at least one compound according to claim 1 in a place where the extermination of an insect is required.

### Overview of the description

The present invention relates to a cyclopropane carboxylate derivative which has persistent insecticidal activity, an insecticide containing the same, and a method for killing insects using the same.

### [Explanation]

Since the cyclopropane carboxylate derivative represented by general formula (1) according to claim 1 is a new compound and makes a contribution over the prior art, the cyclopropane carboxylate derivative is a special technical feature.

The insecticide of the invention claimed in claim 2 exclusively utilizes insecticidal activity of the cyclopropane carboxylate derivative of the invention claimed in claim 1.

The method of the invention claimed in claim 3 uses the cyclopropane carboxylate derivative of the invention claimed in claim 1 and the insecticide of the invention claimed in claim 2.

Therefore, the inventions claimed in claims 1, 2 and 3 have the same or corresponding special technical features.

[Case 37] Product and another product handling the product

### Title of Invention

Magnetic card for learning and card type recorder

What is claimed is:

### [Claim 1]

A magnetic card for learning, comprising: a recording or recordable magnetic track (5) including an upstream as a part for questions and the subsequent downstream as a part for answers corresponding to the part for questions in a running direction of a card; and a notch (7) for causing the card to pause between the part for questions and the part for answers. (See, Fig. 1)

### [Claim 2]

A card type recorder including a pausing system, comprising: a detector (45) for detecting presence or absence of a card with respect to a transfer route (22) of the card and a notch formed on the card; and a power switch (44) for controlling a card driving system according to an operation of the detector. (See, Fig. 2)

### Overview of the description and drowings

The present invention is directed to a magnetic card for learning whose recording part is divided into two parts by means of a notch, wherein, when a card is inserted into the transfer route, a power switch (44) is turned on via a detector (45) by using a front edge of the card itself to transfer the card and, when the notch (7) of the card reaches a position of the detector (45), the recorder can be put in a pausing state by turning off a power source and the pausing state can be canceled by pressing a rear edge of the card.





Fig. 2

### [Explanation]

The "pausing system comprising a detector (45) for detecting presence or absence of a card with respect to a transfer route (22) of the card and a notch formed on the card and a power switch (44) for controlling a card driving system according to an operation of the detector" as a special technical feature of the invention in claim 2 inevitably demonstrates the function thereof by providing an external operation with respect to the "notch (7) for causing the card to pause" as the special technical feature of the invention in claim 1. Therefore, the card type recorder of claim 2 is suitable for handling the magnetic card for learning of claim 1. Therefore, the inventions in claims 1 and 2 have the same or corresponding special technical features and satisfy the requirements of unity of invention. [Case 38] Product and method of handling the product

### Title of Invention

Cassette and mechanism inserting/ejecting cassette to/from projector

#### What is claimed is:

### [Claim 1]

A cassette, comprising: detachable covers (16, 18) for protecting a projection mask (14); a gas passage way (68) formed in one cover (16) for causing gas to flow therethrough in order to exchange the gas between an inside and an outside of the cassette; and a normal closed valve provided within the gas passage way. (See, Fig. 1) [Claim 2]

A mechanism for inserting/ejecting a cassette into/from a projector, comprising: attaching covers (16, 18) on a surface of a mask (14) of the cassette; evacuating the cassette to protect the mask (14) from outside air; placing the cassette in a receptacle of the projector; releasing the vacuum of the cassette in the receptacle of the projector; removing the covers (16, 18); causing the cassette to move to a projecting place and to return the cassette in the receptacle of the projector after projection; attaching the covers (16, 18); evacuating the cassette; and ejecting the cassette from the receptacle of the projector. (See, Fig. 2)

#### Overview of the description and drowings

The invention relates to a projection mask for semiconductor printing and a projector for projecting a mask image on a silicon substrate. The projection mask is required to be protected by covers in order to prevent the projection mask from adhesion of dust and opening/closing of the covers are also required to be performed automatically within the projector.



### [Explanation]

The method of claim 2 is directed to perform attachment/detachment of the covers of the cassette of claim 1 as well as to perform automatic insertion/ejection of the cassette into/from the projector, thereby causing the cassette to demonstrate the function thereof, and thus is suitable for handling the cassette of claim 1.

Therefore, the inventions in claims 1 and 2 have the same or corresponding special technical features and satisfy the requirements of unity of invention.

[Case 39] Method and Product directly used to carry out the method

## Title of Invention

Tunnel enlargement excavation method and enlargement shield machine

What is claimed is:

## [Claim 1]

A tunnel enlargement excavation method, comprising: partially excavating to enlarge an enlargement planned area of an existing tunnel (3) having been built by a shield construction method; assembling and installing an enlargement shield machine (18) for excavating an outer periphery of the existing tunnel (3) at the enlarged portion (6); and causing an enlargement shield machine (18) to move forward along the existing tunnel (3) while removing the existing tunnel linings (2) one after another to thereby construct the enlargement section. (See, Fig. 1)

## [Claim 2]

The tunnel enlargement excavation method according to claim 1, wherein an entire cutting face in a propulsive direction is excavated by using a power assisted excavator (22a) installed in the enlargement shield machine (22). (See, Fig. 2) [Claim 3]

An enlargement shield machine (18), further comprising: a guide plate (12) for guiding the enlargement shield machine (18) along a primary shield segment (2) in an inner periphery of the machine; and a jack (15) for causing the enlargement shield machine (18) to move forward with a reaction from a secondary segment (19) mounted on an inner surface of the enlarged tunnel. (See, Fig. 1)

## [Claim 4]

The enlargement shield machine according to claim 3, further comprising: a rotational cutter (22a) moving reciprocately in a circumferential direction of the enlargement shield machine (22) around an outer perimeter of a primary shield segment (21) on an advancing surface of the enlargement shield machine (22). (See, Fig. 2)

## Overview of the description and drowings

The present invention relates to a tunnel enlargement excavation method for providing an enlargement excavation section at every predetermined distance on the way of the tunnel and an enlargement shield machine to be used in the tunnel excavation method. Conventionally, a method in which an enlargement planned area is provided with pits from the ground after excavation of a tunnel having a normal diameter to construct the enlargement portion by using the pits is known as the above described excavation method.



Fig. 2

## [Explanation]

The invention claimed in claim 2 has the same or corresponding special technical features of claim 1.

claim 3 and 4 recites an invention of a machine to be directly used in carrying out an invention of a method of claim 1. Therefore, the inventions in claims 1 and 3 have the same or corresponding special technical features.

Therefore, the inventions according to claims 1 through 4 satisfy the requirements of unity of invention.

[Case 40] Method and Product directly used to carry out the method

### Title of Invention

Method for forming heat insulating material and mixing gun to be used in the method

#### What is claimed is:

### [Claim 1]

A method for forming a fire-resistive heat insulating material, wherein a mixture composed of synthetic polymer foaming particles, synthetic polymer latex binder, and an organobromine contain compound for applying fire-resistive property to the combined synthetic polymer foaming particles is introduced into a cavity portion between surfaces. [Claim 2]

A mixing gun: wherein a high-pressure gas ejection tip (3) is provided in a suction chamber (4); wherein an injection pipe (1) is connected to a front surface of the high-pressure gas ejection tip (3) wherein a suction tube (6) for sucking synthetic polymer foaming particles is connected in a branch-form near the high-pressure gas ejection tip (3) of an inner side of the suction chamber (4); and wherein an injecting portion (5) to which a latex binder and a fire retardant are introduced at a position in the adjacent to an injection tip (2) of a tip of the injection pipe is provided.

Overview of the description and drowings

The present invention relates to heat insulation in a place where the heat conduction between surfaces spaced to each other is desired to be minimized, e.g., heat insulation in an architectural construction.

Since the expandable polystyrene beads have a cellular structure, the expandable polystyrene beads are suitable for heat insulation of a cavity portion. However, the expandable polystyrene beads have extremely low bulk density and free flowing characteristics, so that it frequently difficult to prevent the expandable polystyrene beads kept in the cavity from leakage thereof through joints or defective portions of cavity walls. A solution of the above described problem developed by the applicant of the present application is to cover the expandable polystyrene beads with the synthetic polymer latex binder. According to the above method, the latex binder can prevent the expandable polystyrene beads from flowing and can prevent the expandable polystyrene beads from flowing out through an opening.

The present invention is characterized in that the synthetic polymer foaming particles are mixed with a latex binder flow and a fire retardant flow at a desired rate to be introduced into the cavity portion by using a mixing gun by which the generated mixture is sent into the cavity via the injection tip (2) of the gun.

In the above described mixing gun, the high polymer foaming particles are mixed with the latex binder flow and the fire retardant flow at a position in the adjacent to the injection tip

(2) of the injection pipe (1), followed by immediate injection of the mixture through the injection tip (2). Therefore, even if a portion inserted into the cavity is made longer by using a longer injection pipe, possible adhesion of the mixture to an inner wall of the injection pipe (1) can be decreased and thus the mixture can be charged into the cavity continuously and uniformly.

The mixing gun can be used also as a mixture spraying gun for constructing wall surfaces having noise insulation property and water proof property by preliminary applying adhesion on the wall surfaces and spraying the mixture on the wall surfaces having been applied with the adhesion.



[Explanation]

The mixing gun of claim 2 is applicable also to a method other than the method of claim 1. However, the mixing gun of claim 2 is suitable for carrying out the method of claim 1 directly. Therefore, the inventions in claims 1 and 2 have the same or corresponding special technical features and satisfy the requirements of unity of invention.

[Case 41] Method and Product directly used to carry out the method

## Title of Invention

System for transmitting/displaying television image signal and transmitting/receiving device of television image signal

## What is claimed is:

## [Claim 1]

A system for transmitting/displaying a television image signal: wherein the television image signal is subjected to a time-base expansion at a screen center portion, whereas the television image signal is subjected to a time-base compression at a screen surrounding portion; and wherein the television image signal is transmitted by a relatively narrow occupied channel suitable for the time-based expanded television image signal at the screen center portion and the received television image signal is decoded to an original-time based signal at a receiving side to display the decoded television image signal. [Claim 2]

...A transmission device for transmitting a television image signal equipped with a control means for controlling deflection of the imaging means nonlinearly, the control means controlling so as to expand a time base of the transmitted television image signal obtained from the imaging means at a screen center portion, whereas the control means controlling so as to compress the television image signal at a screen surrounding portion. [Claim 3]

... A receiving device for receiving a television image signal equipped with a time base conversion circuit which compresses the time base of the received television signal at a screen center portion, whereas which expands the time base of the received television signal at a screen surrounding portion.

## Overview of the description

The conventional scanning operation of a television screen is performed with a linear speed in both of a horizontal direction and a vertical direction of the screen in both cases of a television camera and an image display device such as an image receiver to achieve a uniform resolution at everywhere on the screen. Therefore, in a case where the number of scanning lines of the screen is increased as it is done in a future expected high-quality television, since a frequency bandwidth required in transmitting the television image signal becomes several number of times or several tens of number of times of the conventional numbers, it is difficult to realize such high-quality television.

According to the present invention, use of a difference in visual feature between the screen center portion and the screen surrounding portion in the image display screen enables more stable transmission of a high-quality color television image signal by using a narrow band transmission pathway.

## [Explanation]

The transmission device and the receiving device of claims 2 and 3 are used directly in the time-based expansion of the television image signal at the screen center portion and the time-based compression of the television image signal at the screen surrounding portion and decoding thereof as the special technical feature of the transmission/display system of claim 1.

The "control means controlling so as to expand a time base of the transmitted television image signal obtained from the imaging means at a screen center portion, whereas the control means controlling so as to compress the television image signal at a screen surrounding portion" of claim 2 and the "time base conversion circuit which compresses the time base of the received television signal at a screen center portion, whereas which expands the time base of the received television signal at a screen surrounding portion" of claim 3 complementally relate to each other. The inventions make a contribution to the prior art that enables more stable transmission of the high-quality color television image signal via the narrow band transmission pathway by using the difference in visual feature between the screen center portion and the screen surrounding portion in the image display surface and, therefore, are considered as the special technical features.

Thus, the inventions according to claims 1, 2, and 3 satisfy the requirements of unity of invention.

#### [Case 42] Markush-form

#### Title of Invention

Poly(hexamethylene terephthalate) derivatives

What is claimed is:

[Claim 1]

A compound represented by general formula,



, and n satisfies the formula of  $50 \le n \le 100$ .

### Overview of the description

The esterification of a known poly(hexamethylene terephthalate) containing a terminal COOH group with a compound containing  $\textcircled{}_{\text{CLLO}}$  has a reduced number of free COOH groups that cause heat deterioration, resulting in a heat deterioration resistance characteristic.

Meanwhile, the compound obtained by esterification of a known poly(hexamethylene terephthalate) containing a terminal COOH group with a compound containing  $CH_2-CH-\bigcirc-CH_2O-$  is used as raw material of curing resin after mixing with an unsaturated monomer (addition reaction) and curing.

[Explanation]

The group of compounds containing  $CH_2 - CH_2 - C$ 

#### [Case 43] Markush-form

#### Title of Invention

Compounds having inhibitory activity against tyrosine kinase

What is claimed is

### [Claim 1]

A compound represented by the following formula (I),

wherein A, B and A' are each independently selected from a single bond, -O-, -S-, -C(=O)O-, -C(=O)NH-, ..., an  $\alpha$  structure, a  $\beta$  structure, a  $\gamma$  structure, ..., a carbocycle and a heterocycle,

Z and Z' each independently represent CH or N,

X, X', Y and Y' are each independently selected from hydrogen, C1-8 alkyl, C1-8 alkenyl, ...,

or, X and Y may form a 4-7 membered ring together with Z,

X' and Y' may form a 4-7 membered ring together with Z',

however, two or more of A, B and A' do not form a single bond, and at least one of A, B and A' is a group selected from an  $\alpha$  structure, a  $\beta$  structure and a  $\gamma$  structure.

#### Overview of the description

The present invention relates to compounds having inhibitory activity against tyrosine kinase.

(Compounds in which B is an  $\alpha$  structure are mainly stated in the examples.)

#### [Results of the Prior Art Search]

Some of the compounds represented by the formula (I) of the invention claimed in claim 1 are described in document 1 and have already been publicly known.

#### [Explanation]

(A) Decision of subject of the examination based on special technical features (see 4.1)

The invention claimed in claim 1 is an invention relating to a group of compounds described in the Markush-form, and the group of compounds is not a group of compounds having a common chemical structure which occupy a large portion of the formula (I), or a group of compounds which share a structurally distinctive portion in view of the document 1.

Thus, the above group of compounds does not satisfy the requirement that "a

common chemical structure is present, i.e., a significant chemical structural element is shared by all the inventions understood based on the alternatives" (not fulfilling requirement (ii-1) stated in "6.2 Markush-form" of "Part II Chapter 3 Unity of Invention" in Examination Guidelines).

Since all alternatives of the formula (I) of the claimed invention are not the group of chemical substances which are expected from the knowledge in the art that they have the same effect in the claimed invention, the claimed invention does not satisfy the requirement that "all the inventions understood based on the alternatives belong to a group of chemical substances that is recognized as one genus in the art to which the inventions pertain" (not fulfilling requirement (ii-2) stated in "6.2 Markush-form" of "Part II Chapter 3 Unity of Invention" in Examination Guidelines).

Thus, regarding the group of compounds described in Markush-form of claim 1, it is not the case that all alternatives have the same or corresponding special technical features. In consideration of the statement of examples, etc., "compounds in which B is an  $\alpha$  structure" in the formula (I) are determined to be the subject of the examination as "the invention first described in the claims".

In the formula (I), the compounds other than "the compounds in which B is the  $\alpha$  structure" are different from compounds of "the invention first described in the claims". Further, the compounds other than "the compounds in which B is the  $\alpha$  structure" and the compounds of "the invention first described in the claims" do not have the same or corresponding special technical features.

Therefore, of the inventions claimed in claim 1, the invention relating to "compounds in which B is the  $\alpha$  structure" in the formula (I) shall be the subject of the examination.

(B) Decision of subject of the examination based on examination efficiency (see 4.2)

In the inventions claimed in claim 1, the inventions relating to compounds other than "compounds in which B is the  $\alpha$  structure" in the formula (I) are not the inventions in the same category that include all matters specifying the invention of "the invention first described in the claims".

Moreover, the inventions are not the inventions for which examination can be made without substantially conducting additional prior art searches and making determinations as a result of examining the invention which is determined to be the subject of the examination, and there is no other reason that it is efficient to examine the inventions collectively.

Therefore, in the inventions claimed in claim 1, the inventions relating to compounds other than "the compounds in which B is the  $\alpha$  structure" in the formula (I) are not the subject of the examination on requirements other than the requirement of Article 37.

#### [Measures of the applicant]

When the invention claimed in claim 1 is amended as "compounds in which B is an  $\alpha$
structure" in the formula (I), the invention which is determined to be the subject of the examination before amendment and the invention claimed in claim 1 after amendment fulfill the requirement of Article 37.

Therefore, the amendment shall be permitted as legal amendment.

[Case 44] Intermediate and Final Products

## Title of Invention

Thiazolo[2,3-b]quinazoline derivatives and intermediates for producing the same

What is claimed is

[Claim 1]

A compound represented by general formula [I], wherein R 1 represents a methylthio or a methylsulfinyl.



[Claim 2]

A compound represented by general formula [II], wherein R 1 represents a methylthio or a methylsulfinyl, and R 2 represents a C1-C6 alkyl group.



Overview of the description

The present invention relates to thiazolo[2,3-b]quinazoline derivatives represented by general formula [I] which have anti-allergic activity, and thiazolo[2,3-b]quinazoline derivatives represented by general formula [II] which are intermediates useful for producing the same.

The compound represented by general formula [I] is easily produced by hydrolyzing the compound represented by general formula [II].

## [Explanation]

The invention claimed in claim 2 is an intermediate of the final product which is the invention claimed in claim 1. The two compounds have a new basic skeleton in common.



Further, since the compound according to claim 1 is directly produced from the compound according to claim 2, the inventions claimed in claims 1 and 2 have the same or corresponding special technical features.