

Search query (2): [SP]: 1. reversibly piezochromic security element for the forgery-protection of value documents, the security element being characterized in that it comprises a collection of optically contrasting pigment particles in a film or a coating layer of an elastic polymer. 2. security element according to claim 1, wherein at least part of the pigment particles are selected from the group consisting of the needle-shaped and the plate- or flake-shaped particles. 3. security element according to claim 1, wherein at least part of the pigment particles are selected from the group consisting of the thin-film interference pigment particles. 4. security element according to claim 1, wherein at least part of the pigment particles are selected from the group of the optically variable pigment particles. 5. security element according to claim 1, wherein at least part of the pigment particles comprise a fabry-perot reflector/dielectric/absorber layer structure. 6. security element according to claim 1, wherein at least part of the pigment particles are flakes with diameter in the range of between 10 and 50 micrometers. 7. security element according to claim 1, wherein at least part of the pigment particles are selected from the group of the magnetic or magnetizable pigment particles. 8. security element according to claim 1 wherein the pigment particles are present in the film or coating layer in a concentration of between 5 and 25 wt- percent, preferably of between 10 and 15 wt- percent. 9. security element according to claim 1, wherein at least part of the pigment particles are oriented in a position which is substantially different from an alignment in the plane of the film or coating layer. 10. security element according to claim 9, wherein at least part of the pigment particles are close to vertically oriented with respect to the plane of the substrate, such that the needle-axis of needle-shaped particles is within 30 degrees from the normal to the plane, respectively that the flake-axis of flake-shaped particles is within 30 degrees from the plane of the film or coating. 11. security element according to claim 1, wherein the elastic polymer is chosen from the group of the highly flexible polymers consisting of the natural rubbers, the synthetic rubbers including the styrene-butadiene copolymers, the acrylate latex systems, the polychloroprenes (neoprene), the nitrile rubbers, the butyl rubbers, the polysulfide rubbers, the cis-1,4 polyisoprenes, the ethylene-propylen terpolymers (epdm rubbers), the silicone rubbers, the polyurethane rubber, and the porous silicones. 12. security element according to claim 1, wherein the elastic polymer is chosen from the group consisting of the uv-curing and the electron-beam-curing polymers. 13. security element according to claim 1, wherein the elastic polymer is a two-component silicon elastomer. 14. security element according to claim 1, wherein the elastic polymer is a one-component silicon dielectric gel. 15. security element according to claim 1, characterized in that the film of elastic polymer containing the pigment particles is covered by an at least partially transparent protecting film. 16. security element according to claim 1, characterized in that the film of elastic polymer containing the pigment particles is comprised between two at least partially transparent protecting films. 17. coating composition for the production of a reversibly piezochromic security element, for the forgery-protection of value documents, the coating composition being characterized in that it comprises a collection of optically contrasting pigment particles in a liquid or pasty polymerizable precursor monomer or oligomer, able to be cured to an elastic polymer. 18. coating composition according to claim 17, characterized in that at least part of the pigment particles are selected from the group consisting of the needle-shaped and the plate- or flake-shaped particles. 19. coating composition according claim 17, characterized in that at least part of the pigment particles are selected from the group consisting of the thin-film interference pigment particles. 20. coating composition according to claim 17, characterized in that at least part of the pigment particles are selected from the group of the optically variable pigment particles. 21. coating composition according to claim 17, characterized in that at least part of the pigment particles comprise a fabry-perot reflector/dielectric/absorber layer structure. 22. coating composition according to claim 17, characterized in that at least part of the pigment particles are flakes with diameter in the range of between 10 and 50 micrometers. 23. coating composition according to claim 17, characterized in that at least part of the pigment particles are selected from the group of the magnetic or magnetizable pigment particles. 24. coating composition according to claim 17 characterized in that the pigment particles are present in a concentration of between 5 and 20 wt- percent, preferably of between 10 and 15 wt- percent. 25. process for making a reversibly piezochromic security element for the forgery-protection of value documents, the process comprising the steps of a) providing a substrate b) applying a coating composition, comprising a collection of optically contrasting pigment particles in a liquid or pasty polymerizable precursor monomer or oligomer, to at least part of the substrate c) curing the coating composition to an elastic polymer. 26. process according to claim 25, characterized in that said optically variable flake pigment is a magnetic or magnetizable pigment, and that step b) comprises the magnetic orienting of said flake pigment in the applied coating with the help of an external magnetic field. 27. process according to claim 26, characterized in that said magnetic orienting is performed using an engraved plate of magnetized permanent magnetic material. 28. process according to claim 25, characterized in that the coating composition is covered by an at least partially transparent polymer foil. 29. process according to claim 25, characterized in that the substrate is an at least partially transparent polymer foil. 30. use of a security element according to claim 1 for the counterfeit protection of a security document or item. 31. use according to claim 30, wherein said security document or item is chosen from the group consisting of the value documents, the banknotes, the identity documents, the access-cards, the banking cards, and the label serving for tax collection purposes. 32. security document carrying a security element according to claim 1.

Results: 56

Yenny Campos

Search history

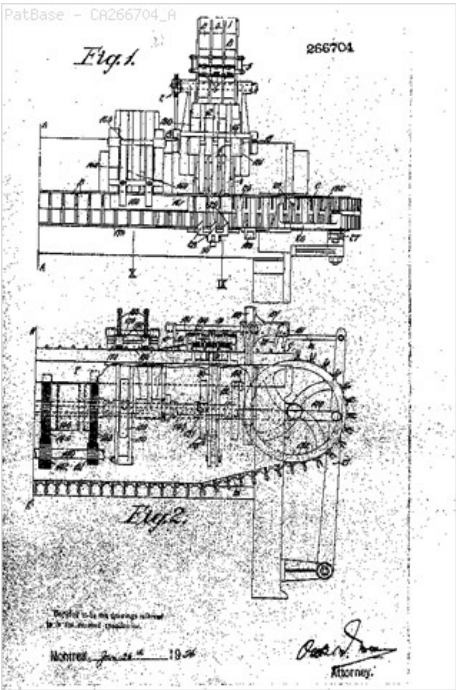
Search 1: TAC=(piezochromic security element and reversibly and pigment flakes and elastic polymer) (Results 1)

Search 2: [SP]: 1. reversibly piezochromic security element for the forgery-protection of value documents, the security element being characterized in that it comprises a collection of optically contrasting pigment particles in a film or a coating layer of an elastic polymer. 2. security element according to claim 1, wherein at least part of the pigment particles are selected from the group consisting of the needle-shaped and the plate- or flake-shaped particles. 3. security element according to claim 1, wherein at least part of the pigment particles are selected from the group consisting of the thin-film interference pigment particles. 4. security element according to claim 1, wherein at least part of the pigment particles are selected from the group of the optically variable pigment particles. 5. security element according to claim 1, wherein at least part of the pigment particles comprise a fabry-perot reflector/dielectric/absorber layer structure. 6. security element according to claim 1, wherein at least part of the pigment particles are flakes with diameter in the range of between 10 and 50 micrometers. 7. security element according to claim 1, wherein at least part of the pigment particles are selected from the group of the magnetic or magnetizable pigment particles. 8. security element according to claim 1 wherein the pigment particles are present in the film or coating layer in a concentration of between 5 and 25 wt- percent, preferably of between 10 and 15 wt- percent. 9. security element according to claim 1, wherein at least part of the pigment particles are oriented in a position which is substantially different from an alignment in the plane of the film or coating layer. 10. security element according to claim 9, wherein at least part of the pigment particles are close to vertically oriented with respect to the plane of the substrate, such that the needle-axis of needle-shaped particles is within 30 degrees from the normal to the plane, respectively that the flake-axis of flake-shaped particles is within 30 degrees from the plane of the film or coating. 11. security element according to claim 1, wherein the elastic polymer is chosen from the group of the highly flexible polymers consisting of the natural rubbers, the synthetic rubbers including the styrene-butadiene copolymers, the acrylate latex systems, the polychloroprenes (neoprene), the nitrile rubbers, the butyl rubbers, the polysulfide rubbers, the cis-1,4 polyisoprenes, the ethylene-propylen terpolymers (epdm rubbers), the silicone rubbers, the polyurethane rubber, and the porous silicones. 12. security element according to claim 1, wherein the elastic polymer is chosen from the group consisting of the uv-curing and the electron-beam-curing polymers. 13. security element according to claim 1, wherein the elastic polymer is a two-component silicon elastomer. 14. security element according to claim 1, wherein the elastic polymer is a one-component silicon dielectric gel. 15. security element according to claim 1, characterized in that the film of elastic polymer containing the pigment particles is covered by an at least partially transparent protecting film. 16. security element according to claim 1, characterized in that the film of elastic polymer containing the pigment particles is comprised between two at least partially transparent protecting films. 17. coating composition for the production of a reversibly piezochromic security element, for the forgery-protection of value documents, the coating composition being characterized in that it comprises a collection of optically contrasting pigment particles in a liquid or pasty polymerizable precursor monomer or oligomer, able to be cured to an elastic polymer. 18. coating composition according to claim 17, characterized in that at least part of the pigment particles are selected from the group consisting of the needle-shaped and the plate- or flake-shaped particles. 19. coating composition according claim 17, characterized in that at least part of the pigment particles are selected from the group consisting of the thin-film interference pigment particles. 20. coating composition according to claim 17, characterized in that at least part of the pigment particles are selected from the group of the optically variable pigment particles. 21. coating composition according to claim 17, characterized in that at least part of the pigment particles comprise a fabry-perot reflector/dielectric/absorber layer structure. 22. coating composition according to claim 17, characterized in that at least part of the pigment particles are flakes with diameter in the range of between 10 and 50 micrometers. 23. coating composition according to claim 17, characterized in that at least part of the pigment particles are selected from the group of the magnetic or magnetizable pigment particles. 24. coating composition according to claim 17 characterized in that the pigment particles are present in a concentration of between 5 and 20 wt- percent, preferably of between 10 and 15 wt- percent. 25. process for making a reversibly piezochromic security element for the forgery-protection of value documents, the process comprising the steps of a) providing a substrate b) applying a coating composition, comprising a collection of optically contrasting pigment particles in a liquid or pasty polymerizable precursor monomer or oligomer, to at least part of the substrate c) curing the coating composition to an elastic polymer. 26. process according to claim 25, characterized in that said optically variable flake pigment is a magnetic or magnetizable pigment, and that step b) comprises the magnetic orienting of said flake pigment in the applied coating with the help of an external magnetic field. 27. process according to claim 26, characterized in that said magnetic orienting is performed using an engraved plate of magnetized permanent magnetic material. 28. process according to claim 25, characterized in that the coating composition is covered by an at least partially transparent polymer foil. 29. process according to claim 25, characterized in that the substrate is an at least partially transparent polymer foil. 30. use of a security element according to claim 1 for the counterfeit protection of a security document or item. 31. use according to claim 30, wherein said security document or item is chosen from the group consisting of the value documents, the banknotes, the identity documents, the access-cards, the banking cards, and the label serving for tax collection purposes. 32. security document carrying a security element according to claim 1. (Results 56)

Search 3: TAC=(piezochromic security element and reversibly and pigment flakes and elastic polymer) (Results 1)

Title: MATCH BOX FILLING MACHINE

Classifications:



Family:

Publication number	Publication date	Application number	Application date
CA266704 A	19261214		00000000

Probable Assignee: BRYANT AND MAY PROPRIETARY LTD
Assignee(s): (std): BRYANT AND MAY PROPRIETARY LTD
Assignee(s): THE BRYANT AND MAY PROPRIETARY LIMITED ; ANDREW FRANCIS NEY
Inventor(s): (std): NEY ANDREW FRANCIS
Inventor(s): ANDREW FRANCIS NEY

Title: PROCESS FOR ORIENTING FERROMAGNETIC FLAKES IN PAINT FILMS

Abstract: Source: US2418479A 1. A process for preparing a metal-pigmented film which comprises applying a wet paint film containing metal particles comprising ferromagnetic metal in flake form to a non-ferromagnetic base and subjecting said wet paint film to the action of a magnetic field with the Elm positioned in the plane of said field, and at short intervals of time varying the directional angle between an axis in the plane of the film and the said magnetic field through at least 90° while keeping the film in the plane of the field until the Elm has dried sufficiently to permit removal of the film from said field Without causing deorientation of said metal flake particles.

Classifications:

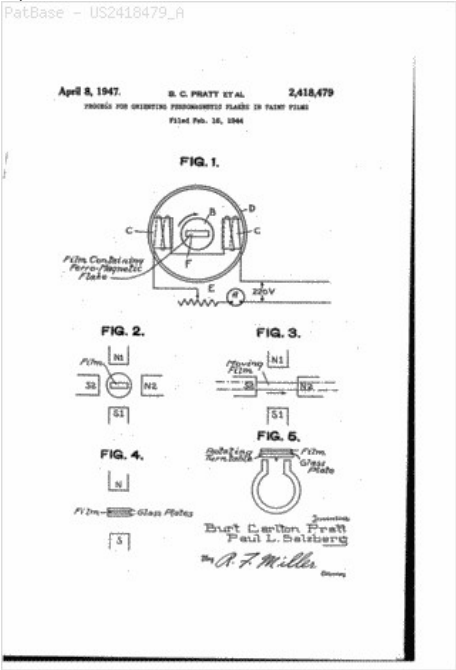
International (IPC 8-9): B05D3/14 (Advanced/Invention);
B05D3/14 (Core/Invention)

International (IPC 1-7): B05D7/24

CPC: B05D3/207 Y10S428/90

European: B05D3/14 B05D3/207

US: 106/198.1 252/62.54 427/550 428/900 523/300



Family:

Publication number	Publication date	Application number	Application date
US2418479 A	19470408	US19440522666	19440216

Priority:

US19440522666 19440216

Probable Assignee: DU PONT

Assignee(s): (std): DU PONT

Assignee(s): E I DU PONT DE NEMOURS AND COMPANY

Inventor(s): (std): CARLTON PRATT BURT ; SALZBERG PAUL L

Inventor(s): PRATT BURT CARLTON

Title: PROCESS FOR OBTAINING PIGMENTED FILMS

Abstract: Source: US2570856A (Claim 1) A metal-pigmented fffim coinprising a film- forming binder and from 0.1 % to 95 %, by weight of said binder, of metal pigment particles, at 'least 50% of said metal particles being in flake form and at least 10% of said inetal particles being ferromagnetic, said metal particles in flake To form being oriented so that a major axis of each of said particles in flake 'form is parallel to a major axis of each other of said particles in flake form, said parallel major axes being at an angle of 28' to 75' to the plane of said film.

Classifications:

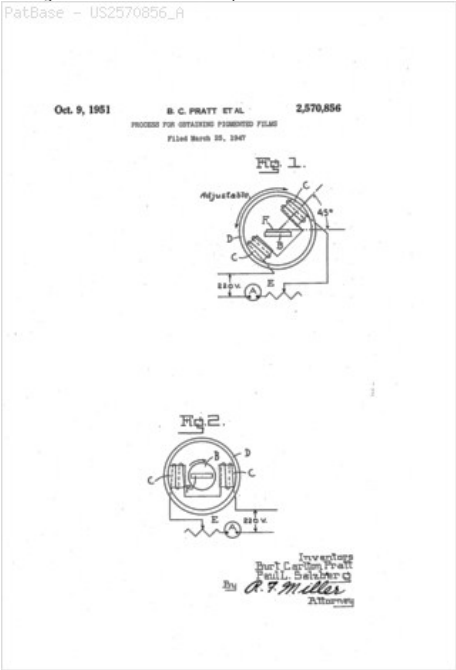
International (IPC 8-9): C09D5/10 (Advanced/Invention); C09D5/10 (Core/Invention)

International (IPC 1-7): B05D7/24 C09D5/10

CPC: C09D7/1291 C08J5/18 C08K3/08 C09D5/36 Y10T428/24058 Y10T428/256

European: C08J5/18 C09D5/36 C09D7/12S M08K3/08

US: 106/403 106/404 252/511 428/105 428/328



Family:

Publication number	Publication date	Application number	Application date
US2570856 A	19511009	US19470737178	19470325

Priority:

US19470737178 19470325

Probable Assignee: DU PONT

Assignee(s): (std): DU PONT

Assignee(s): E I DU PONT DE NEMOURS AND CO ; E I DU PONT DE NEMOURS AND COMPANY

Inventor(s): (std): SALZBERG PAUL L ; CARLTON PRATT BURT

Inventor(s): PRATT BURT CARLTON

Title: MAGNETIC LOADED VARNISH FOR PRODN OF PAT-TERNS

Abstract: Source: DE2006848A1 Ferromagnetic materials, e.g. Fe, Co, Ni or their alloys, or oxides, are mixed in a varnish base which is applied either to a sheet iron surface or a non-magnetic surface such as plastic, card or paper and then a shaped magnetic field applied to bring the varnish into the pattern desired. The initial application may be by brushing, spraying, printing or silk screen printing.

Classifications:

International (IPC 8-9): B05D3/14 B05D5/06 B44C1/00

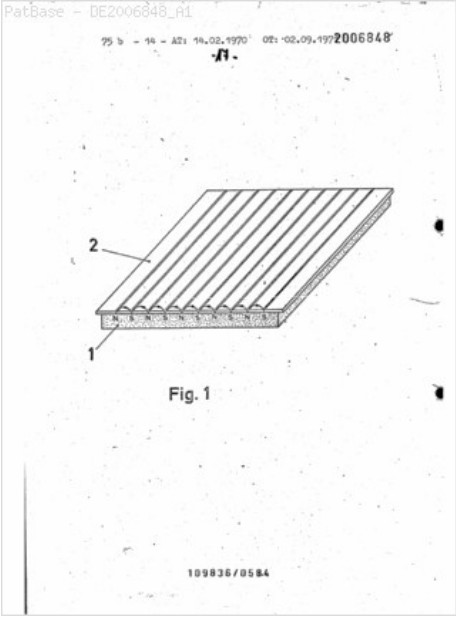
H01F7/02 (Advanced/Invention);

B05D3/14 B05D5/06 B44C1/00 H01F7/02 (Core/Invention)

International (IPC 1-7): B44F5/00 G01R33/10

CPC: B05D3/207 B05D5/061 B44C1/00 H01F7/0247

European: B05D3/14 B05D3/207 B05D5/06E B44C1/00 H01F7/02B3



Family:

Publication number	Publication date	Application number	Application date
DE2006848 A1	19710902	DE19702006848	19700214

Priority:

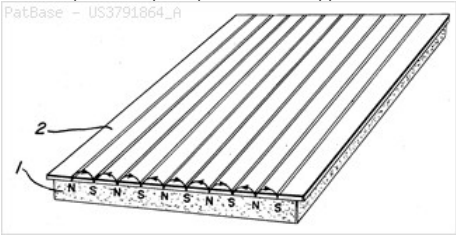
DE19702006848 19700214

Title: METHOD OF ORNAMENTING ARTICLES BY MEANS OF MAGNETICALLY ORIENTED PARTICLES

Abstract: Source: US3791864A A patterned effect can be produced in coatings applied to any surface by employing a preliminary coating which includes a liquid vehicle in which permanent magnet particles are suspended; the coating being applied and then hardened, after which the particles are magnetized under the influence of magnetic lines of force arranged in a predetermined pattern, and another coating containing magnetically orientable particles is applied, which particles become oriented by the magnetic field product by the particles first applied.

Classifications:

International (IPC 8-9): B05D3/14 B05D5/06 B44C1/00 H01F13/00 H01F41/16
H01F7/02 (Advanced/Invention);
B05D3/14 B05D5/06 B44C1/00 H01F13/00 H01F41/14 H01F7/02 (Core/Invention)
International (IPC 1-7): B44C1/00 B44D5/00 B44F5/00 H01F1/06 H01F1/09 H01F1/113
H01F1/28 H01F10/00 H01F41/14 H01F7/00 H01F7/02
CPC: B05D3/20 B05D5/061 B05D7/54 B44C1/00 H01F7/0247 H01F13/003 H01F41/16
European: B05D3/14 B05D3/20 B05D5/06E B44C1/00 H01F13/00B H01F41/16
H01F7/02B3 L05D7/54
US: 117/23.8 117/238 427/550



Family:

Publication number	Publication date	Application number	Application date
BE774930 A1	19720301	BE19710774930	19711104
DE2054934 A1	19720824	DE19702054934	19701107
DE2054934 B1	19720824	DE19702054934	19701107
DE2054934 B2	19720824	DE19702054934	19701107
DE2054934 C2	19730322	DE19702054934	19701107
FR2113650 A1	19720623	FR19710039853	19711105
IT938725 A	19730210	IT19710012997	19711020
NL7115172 A	19720509	NL19710015172	19711103
US3791864 A	19740212	US19710196171	19711105

Priority:

DE19702054934 19701107

Probable Assignee: WEILBURGER LACKFAB J

Assignee(s): (std): MAGNETFAB BONN GMBH ; WEILBURGER LACKFAB J ; WEILBURGER LACKFABRIK ; WEILBURGER LACKFAB GREBE J

Assignee(s): WEILBURGER LACKFAB GREBE J DT ; WEILBURGER LACKFABRIK J GREBE WEILBURG LAHN ALLEM ; WEILBURGER LACKFABRIK J GREBE WEILBURG LAHN ALLEMAGNE ; WEILBURGER LACKFABRIK J GREBE 6290 WEILBURG ; MAGNETFAB BONN GMBH DT ; MAGNETFABRIK BONN GMBH ; MAGNETFABRIK BONN GMBH VORM GEWERKSCHAFT WINDHORST 5300 BONN-BAD GODESBERG ; MAGNETFABRIK BONN GMBH VORMALS GEWERKSCHAFT WINDHORST DOROTHEENSTRASSE 215 POSTFACH 283 53 BONN

Inventor(s): (std): STEINGROEVER E ; HOFMANN WALTER ; HOFMANN W ; STEINGROEVER ERICH DR ING

Inventor(s): STEINGROEVER E DT ; W HOFMANN ; E STEINGROEVER

Title: FILMS CONTAINING SUPERIMPOSED CURVED CONFIGURATIONS OF MAGNETICALLY ORIENTATED PIGMENT

Abstract: Source: US3676273A ABSTRACT OF THE DISCLOSURE A pigmented film comprising a film of film-forming material and contained in the film, magnetically orient-able pigment that is orientated in superimposed curved 15 configurations. B

Classifications:

International (IPC 8-9): B05D3/14 B05D5/06 B44C1/00 (Advanced/Invention);
B05D3/14 B05D5/06 B44C1/00 (Core/Invention)

International (IPC 1-7): B44C1/00 B44C3/02 C09D5/28 C09J5/00

CPC: Y10S428/90 B05D3/207 B05D5/061 B44C1/00 Y10T428/256

European: B05D3/14 B05D3/207 B05D5/06E B44C1/00

US: 264/108 428/328 428/900

Family:

Publication number	Publication date	Application number	Application date
US3676273 A	19720711	US19700059680	19700730

Priority:

US19700059680 19700730

Probable Assignee: WHITTAKER CORP

Assignee(s): (std): DU PONT

Assignee(s): E I DU PONT DE NEMOURS AND CO ; EI DU PONT DE NEMOURS AND CO ; SECURITY PACIFIC NATIONAL BANK ; WHITTAKER A CORP OF CA CORP ; WHITTAKER CORP ; WHITTAKER A CORP OF DE CORP

Inventor(s): (std): GRAVES IRVING STUART

Inventor(s): IRVING STUART GRAVES

Title: THIN FILM OPTICAL VARIABLE ARTICLE HAVING SUBSTANTIAL COLOR SHIFT WITH ANGLE AND METHOD

Abstract: Source: US4705356A Thin film optically variable article having substantial color shift with varying angle of light incidence and viewing and including an optically thick, substantially transparent element carrying a colorant and having first and second surfaces. A multilayer interference coating is carried on one of said first and second surfaces. The colorant serves to modify in essentially a subtractive mode the color at normal incidence and the color shift with angle of the multilayer interference coating as seen by reflection or transmission.

Classifications:

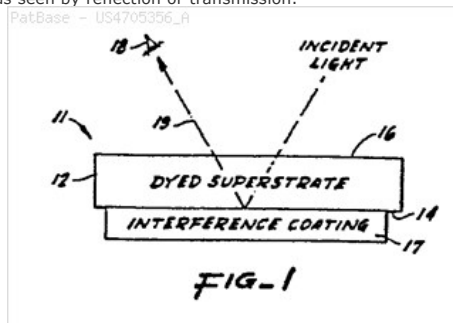
International (IPC 8-9): G02B5/20 G02B5/22 G02B5/28 G06K19/06 G06K19/08 (Advanced/Invention); G02B5/20 G02B5/22 G02B5/28 G06K19/06 G06K19/08 (Core/Invention)

International (IPC 1-7): G02B5/20 G02B5/28 G06K19/08

CPC: Y10S283/902 G02B5/288 G02B5/223 G06K19/06046

European: G02B5/22D G02B5/28 G02B5/28F3 G06K19/06C5

US: 283/902 283/91 283/94 350/166 359/590

**Family:**

Publication number	Publication date	Application number	Application date
AT57770 E	19901115	AT19850304865T	19850708
CA1253367 A1	19890502	CA19850486710	19850712
DE3580208 D1	19901129	DE19853580208	19850708
EP0170439 A1	19860205	EP19850304865	19850708
EP0170439 B1	19901024	EP19850304865	19850708
EP0170439 B2	19950405	EP19850304865	19850708
JP2040651 C3	19960328	JP19850153921	19850712
JP61105509 A2	19860523	JP19850153921	19850712
JP7069489 B4	19950731	JP19850153921	19850712
US4705356 A	19871110	US19840630414	19840713

Priority:

US19840630414 19840713 EP19850304865 19850708 EP19850304865 19850708
CA19850486710 19850712

Probable Assignee: FLEX PRODUCTS INC 2789 NORTHPOINT PARKWAY BUILDING D SANTA ROSA CA 95402 7397 A CORP OF DE

Assignee(s): (std): FLEX PRODUCTS INC ; OPTICAL COATING LABORATORY INC

Assignee(s): OPTICAL COATING LAB INC ; OPTICAL COATING LABORATORY INC A CORP OF CA ; PHILLIPS ROGER W ; FLEX PRODUCTS INC 2789 NORTHPOINT PARKWAY BUILDING ; FLEX PRODUCTS INC 2789 NORTHPOINT PARKWAY BUILDING D SANTA ROSA CA 95402 7397 A CORP OF DE ; FLEX PRODUCTS INC SANTA ROSA CALIF US ; BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIA ; BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIATION ; BERNING PETER H

Inventor(s): (std): BERNING PETER H ; PHILLIPS ROGER W ; PIITAA EICHI BAANINGU ; ROJIYAA DABURIYUU FUIRITSUPUSU

Inventor(s): PHILLIPS ROGER W SANTA TORSA CALIFORNIA 95405 US ; BERNING PETER H SEBASTOPOL CALIFORNIA 95472 US

Designated states: AT BE CH DE FR GB IT LI LU NL SE

Title: THIN FILM OPTICALLY VARIABLE ARTICLE AND METHOD HAVING GOLD TO GREEN COLOR SHIFT FOR CURRENCY AUTHENTICATION

Abstract: Source: US4705300A Thin film optical variable article to be used in a reflection mode having a gold to green color shift with angle for currency authentication and adapted to be carried by a substantially opaque currency sheet which serves as a substrate. The article includes a substantially transparent, optically thick element carrying a subtractive colorant and having first and second surfaces and a multilayer interference coating carried on one of said first and second surfaces. The article is adapted to be carried by the currency sheet so that the coating faces the currency sheet and the colorant carrying element serves as a superstrate facing the incident light. The multilayer interference coating is comprised of a substantially opaque layer of aluminum nearest the substrate, followed by a layer of magnesium fluoride, and then by a layer of chromium having substantial transmission. The colorant has a yellow hue. At normal incidence of light the article has a coppery-gold color shifting towards a vivid green at non-normal incidence of light. The colorant operates in an essentially subtractive mode in combination with the multilayer interference coating to provide the color shift from gold to green at two different angles of incidence and substantially no color at higher angles of incidence to cause a modification of the normal incidence gold color and the color shift with angle properties as seen by reflection.

Classifications:

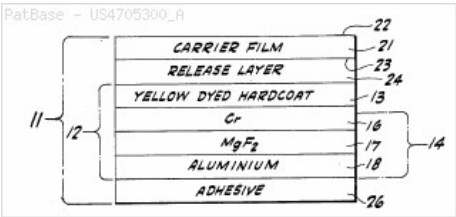
International (IPC 8-9): B42D15/00 (Advanced/Invention); B42D15/00 (Core/Invention)

International (IPC 1-7): B42D15/00 G02B27/00

CPC: Y10S283/904 Y10S359/90 B42D2035/24 B42D25/29

European: B42D15/00C L42D35/24

US: 283/58 283/904 283/91 350/166 350/320 356/2 356/71 359/589 359/900



Family:

Publication number	Publication date	Application number	Application date
US4705300 A	19871110	US19860935065	19861121
US4779898 A	19881025	US19870088144	19870821
US4930866 A	19900605	US19880204723	19880610

Priority:

US19840640141 19840713 US19860935065 19861121 US19870088144 19870821
US19880204723 19880610

Probable Assignee: JDS UNIPHASE CORP

Assignee(s): (std): FLEX PRODUCTS INC ; OPTICAL COATING LABORATORY INC

Assignee(s): BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIA ; BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIATION ; FLEX PRODUCTS INC 2789 NORTHPOINT PARKWAY BUILDING ; FLEX PRODUCTS INC 2789 NORTHPOINT PARKWAY BUILDING D SANTA ROSA CA 95402 7397 A CORP OF DE ; JDS UNIPHASE CORP

Inventor(s): (std): BERNING PETER H ; PHILLIPS ROGER W

Title: Devices and method for rocket booster vectoring to provide stability augmentation during a booster launch phase

Abstract: Source: US4721271A Rocket booster motor vectoring system and method for shortening take-off distance of aircraft, the aircraft being airborne before it is going fast enough for its conventional controls to provide adequate stability and control. A rocket booster motor (52) is coupled to aircraft (50) by means of thrust arm link (56) is pivotal engagement with the aircraft and fixed to the booster, and coupled by rearwardly positioned links (62, 64, 66) having ball and socket joints at both ends, one end being connected to the aircraft through aerodynamic surfaces (68, 70) or through actuators (124, 126), the aerodynamic surfaces being operable by conventional systems within the basic aircraft, and the actuators also being operated by motion sensing systems within the aircraft to vector the thrust of the booster to provide stability augmentation of the aircraft during the boosted launch phase to provide pitch, roll, and yaw control. The thrust vector is rotated or directed in response to signals generated in the basic aircraft control systems.

Classifications:

International (IPC 8-9): B64C15/14 (Advanced/Invention);

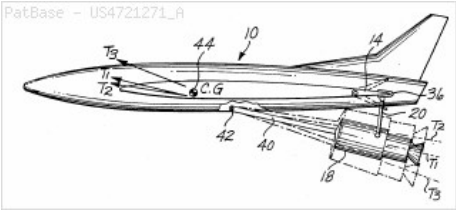
B64C15/00 (Core/Invention)

International (IPC 1-7): B64C15/12

CPC: B64C15/14

European: B64C15/14

US: 244/52 244/54 244/58 244/63 244/75.1 244/75R



Family:

Publication number	Publication date	Application number	Application date
US4721271 A	19880126	US19850701381	19850214

Priority:

US19850701381 19850214

Probable Assignee: BOEING CO

Assignee(s): (std): BOEING CO

Assignee(s): THE BOEING COMPANY

Inventor(s): (std): GOLDSTEIN SIDNEY E ; PERA RONALD J

Title: THIN FILM STRUCTURE HAVING MAGNETIC AND COLOR SHIFTING PROPERTIES

Abstract: Source: US4838648A The disclosure relates to a thin film structure having magnetic and optical variable properties comprising a substrate (12) and a multilayer interference coating (16) carried by the substrate producing an inherent colour shift with angle. The interference coating has a metal-dielectric design which includes a metal (17) which has reflective as well as magnetic properties.

Classifications:

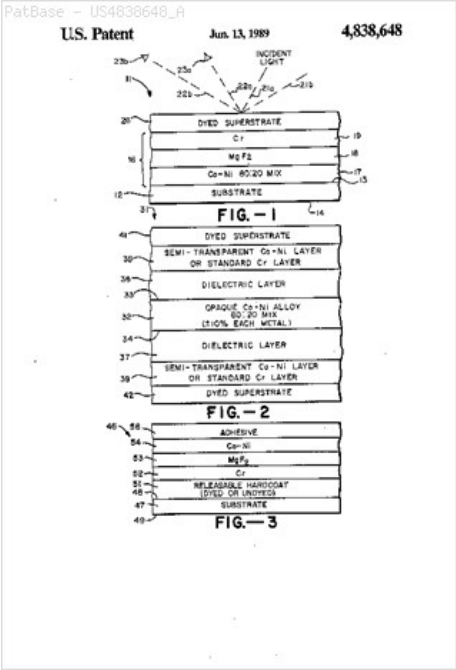
International (IPC 8-9): B32B15/04 B32B7/02 C09C1/00 G02B5/28 G06K19/08 G06K19/10 G09F19/12 G11B5/62 G11B7/24 (Advanced/Invention); B32B15/04 B32B7/02 C09C1/00 G02B5/28 G06K19/10 G09F19/12 G11B5/62 G11B7/24 (Core/Invention)

International (IPC 1-7): B32B15/04 B32B7/02 B42D15/00 C09C1/00 G02B5/28 G06K19/08 G09F19/12 G11B5/62

CPC: Y10S283/902 G02B5/285 C01P2006/42 C09C1/0015 G06K19/10 G11B7/24

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Family:

Publication number	Publication date	Application number	Application date
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Priority:

US19880189779 19880503 CA19890598468 19890502

Probable Assignee: JDS UNIPHASE CORP

Assignee(s): (std): FLEX PROD INC ; FLEX PRODUCTS INC ; OPTICAL COATING LABORATORY INC

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Inventor(s): (std): PHILLIPS ROGER ; PHILLIPS ROGER W ; POORU JII KUUMUZU ; COOMBS PAUL G ; ROJIYAA DABURIYUU FUIRITSUPUSU

Inventor(s): HOORU JII KUUMUZU ; PAUL G COOMBS ; ROGER W PHILLIPS ; ROJAA DABURYUU FUIRITSUPUSU

Designated states: AT BE CH DE ES FR GB GR IT LI LU NL SE