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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
R89: 03-031940-00002-0000 REC. 2006-04-24 17:36:36
EMP. 2026 INDECOMEXIONES
FOLIO 1 DE 1
AUT 538 PETICION
Folios: 2

Trámite	:011
Evento	:379
Actuación	:538

Referencia	:	Expediente No. 05051548
Asunto	:	Solicitud de patente para PUERTA MULTICAPA CONTRA INCENDIO Y METODO PARA HACERLA
Solicitante	:	JELD-WEN, INC.
Fecha de solicitud	:	26 de Mayo de 2005
Publicada en	:	La Gaceta No. 557 del 31 de octubre de 2005

1. Yo, Emilio FERRERO, identificado como aparece al pie de mi firma, actuando como apoderado en el asunto de la referencia, atentamente, solicito se efectúe el examen de patentabilidad de la solicitud en referencia presentada de acuerdo con el Capítulo I del PCT y según lo establecido en el artículo 44 de la Decisión 486 de la Comisión de la Comunidad Andina. Para tal efecto presento junto con este escrito el recibo por valor de \$ 388.000.00, que corresponde a la tasa fijada según lo dispuesto en la resolución No. 35582 del 28 de diciembre de 2005.

2. Ruego atentamente a la Señora Jefe se sirva ordenar que se anexe este recibo para que se efectúe dicho examen y se continúe con el trámite de la solicitud.

Bogotá, 24 ABR. 2008

6-11-62

EMILIO FERRERO
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COLO 14763-841-001-8
ZCA/ZCA/ID-000017/WPC14763

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 06 - 22.297
FECHA : MARZO 21 DE 2006

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Rad: 05-051846-200002-0000 REC. 2006-04-24 17:06:00
Dep. 2020 INDECOE/ADONDES
TIC: 11 PATENTES ELS DE PATENTACION
ALCOSO PETICION FOLIO: 2

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
CAYETER ABOGADOS	CONSIGNACION	BANCO POPULAR	050-00110-6	49935722	21/03/2006	40.671.320.00

***** C O N C E P T O *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01	SOLICITUDES	*** MODIF O LIMITACION AL ALCANCE DE
		TOTAL :	\$ 388.000.00

SON: TRESCIENTOS OCHENTA Y OCHO MIL PESOS

RESPONSABLE :



BO DE CAJA APLICADO AL EXPEDIENTE No. _____

Ado 14736-84100-8

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 05-51548

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **557** DE

FECHA **31 DE OCTUBRE DE 2005** EL TÉRMINO HÁBIL SEÑALADO POR LA

LEY EXPIRA EL **27 DE ENERO DE 2006**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X

United States Patent [19]
Snyder

[11] Patent Number: 4,926,963
[45] Date of Patent: May 22, 1990

- [54] SOUND ATTENUATING LAMINATE FOR
JET AIRCRAFT ENGINES
[75] Inventor: Stephen J. Snyder, West Hills, Calif.
[73] Assignee: UAS Support, Inc., Geneva,
Switzerland
[21] Appl. No.: 333,346
[22] Filed: Apr. 5, 1989

Related U.S. Application Data

- [63] Continuation-in-part of Ser. No. 106,618, Oct. 6, 1987,
Pat. No. 4,848,514.
[51] Int. Cl.⁵ E04B 1/82
[52] U.S. Cl. 181/290; 181/213;
181/214; 181/222; 181/286; 181/293; 181/294;
428/138; 428/246; 428/251; 428/284; 428/285;
428/450; 428/458; 428/466; 428/920; 244/1 N
[58] Field of Search 181/213, 214, 222, 290,
181/292, 293, 294, 286; 29/525.1, 525.2; 244/1
N, 53 B; 428/138, 246, 251, 284, 285, 450, 458,
466, 920

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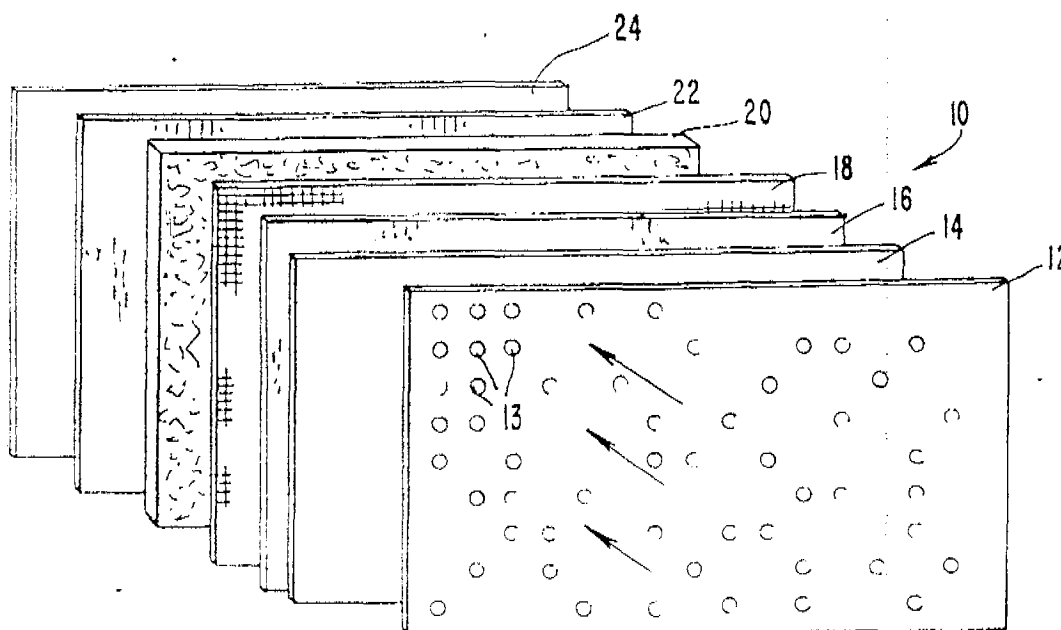
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1974, Acoustical Publications Inc., pp. 20-25.

Primary Examiner—Benjamin R. Fuller
Attorney, Agent, or Firm—Kenyon & Kenyon

[57] ABSTRACT

The present invention relates to a novel sound attenuat-
ing laminate. More particularly, the invention relates to
a simpler, lighter, and more effective noise attenuating
laminate which is made up of seven layers of material.
The laminate includes a duct liner, a moisture barrier, a
first protecting layer, a screen, acoustic attenuating
material, a second protecting layer, and a solid backing
sheet. The laminate is readily incorporated into various
sections of a jet engine compartment in order to attenu-
ate the sound produced by the jet engine. Hollow rivets
are used to conduct acoustical energy to the intermedi-
ary layers of the noise attenuating laminate.

25 Claims, 4 Drawing Sheets



nose cone. These hollow rivets penetrate anti-icing airflow channels to achieve an improved anti-icing system and allow for the passage of acoustic energy radiation from its origin, through the duct liner or nose cone outer skin, and to the acoustic attenuating material.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic diagram showing the seven layers making up an embodiment of the sound attenuating laminate described in the present invention;

FIG. 2 is a diagram showing a jet engine nacelle indicating where the sound attenuating laminate described in this invention would be placed within such a jet engine nacelle;

FIG. 3 is a diagram showing the installation of the sound attenuating laminate in the air inlet duct area of a jet engine nacelle;

FIG. 4 is a diagram showing the installation of the sound attenuating laminate in the nose dome area of a jet engine;

FIG. 5 is a diagram showing the use of hollow rivets to allow for the passage and attenuation of acoustical energy and to improve the anti-icing system.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring specifically to the drawings, FIG. 1 illustrates one embodiment 10 of the present invention. According to this invention, the sound attenuating laminate has seven layers as can be seen in FIG. 1. The first layer 12 is a liner which may be a fan inlet duct liner, a center body liner, a fan exhaust duct liner, or an access door liner. This liner 12 can consist of aluminum or stainless steel and contains perforations 13 that allow for the entry of acoustic energy. The perforations 13 are preferably about one-eighth of an inch in diameter and spaced at approximately five-sixteenth of an inch intervals along the liner.

The second layer 14 of the sound attenuating laminate is composed of a moisture barrier. This moisture barrier 14 is adjacent to the liner 12. A suitable moisture barrier material was found to be fiberglass fabric or fire resistant ceramic fabric. These fabrics are saturated with pressure sensitive silicone adhesive such as PSA 52 with SRC 18 catalyst, manufactured by the General Electric Company, Silicone Products Division, Waterford, N.Y., and are thereby made to bond to the liner 12.

The third layer 16 is a protecting layer and can be composed of fiberglass fabric coated with silicone rubber, viton, fluorosilicone, or teflon. This layer protects the fourth and fifth layers from vapor, moisture, fuel, hydraulic fluid, engine oil, and other contaminants which would be hazardous if allowed to collect and which would also detract from the performance of the acoustic attenuating material. The third layer 16 also serves as a gas permeable membrane allowing for the passage of acoustic energy to acoustic attenuating material in the fifth layer 20. Acoustical energy is carried by air molecules which impinge on the gas permeable membrane 16 causing it to vibrate at the frequency of the acoustical energy being carried. As the gas permeable membrane 16 vibrates, it in turn energizes air molecules on its other side, directing them to the acoustic attenuating material.

The fourth layer 18 consists of a screen of stainless steel or plastic, such as polypropylene, with openings of approximately one eighth of an inch which serves as a spacer to separate the third layer 16 from the fifth layer

20 while maintaining an air space between the third and fifth layers so as to allow the fiberglass coated fabric of the third layer 16 to perform as a membrane in allowing acoustic energy to pass through to the acoustic attenuating material of the fifth layer 20.

The acoustic attenuating material in the fifth layer 20 is formed in a blanket type configuration, preferably two inches thick and is adjacent to the screen of the fourth layer 18. One suitable sound attenuating material was found to be Kaowool ceramic fiber blanketing, manufactured by the Insulating Products Division of Babcock and Wilcox, a McDermott company. Another suitable acoustic attenuating material was found to be 1000 Series Spin-Glas Fiber Glass Insulation, manufactured by the Manville Building Materials Corporation, a subsidiary of the Manville Corporation, Ken-Caryl Ranch, P.O. Box 5108, Denver, Colo. 80217. As discussed below, such materials are appropriate for use in different portions of the engine.

The sixth layer 22 is also a protecting layer and can be made up of the same materials as the third layer 16. The surface of the sixth layer 22 facing away from the acoustic attenuating material of the fifth layer 20 may be additionally coated with aluminum foil to serve as a radiation heat shield where elevated temperatures make this necessary.

The seventh layer 24 is a solid backing sheet which can be composed of aluminum or titanium and which may actually be the outer skin of the nose cowl, fan ducts, or cowl doors, or the inner surface of the nose cowl. It serves to reflect any acoustic energy which has passed through the preceding layers back towards the acoustic attenuating material in the fifth layer 20.

As one can see from the previous discussion, a number of variations are permitted in the construction of the novel laminate. For example, a fire resistant layer could be added to the sound attenuating laminate between the second layer 16 and the third layer 18 in order to protect the acoustic attenuating material and the external aircraft structure from fire hazards. A suitable fire barrier was found to be Nextel 312 Woven Fabric, manufactured by the Ceramic Materials Department of the 3M Corporation, Building 225-4N-07, 3M Center, St. Paul, Minn. 55144-1000. Furthermore, the third layer 16 and sixth layer 22 of the sound attenuating laminate could be fused together at their edges by heat (vulcanized), or by bonding with an adhesive such as PSA52 with SRC 18 catalyst manufactured by the General Electric Company, Silicone Products Division, Waterford, N.Y., thereby encapsulating the fourth 18 and fifth layer 20 further protecting them from vapor, moisture, fuel, hydraulic fluid, engine oil, and other contaminants.

The resulting laminate is incorporated into various portions of the jet engine compartment. FIG. 2 shows a typical jet engine nacelle 30, such as that used to house the commercial model JT3D jet engine. Shaded areas 31-36 show the application of the laminate of the present invention. Primary areas for application include the fan inlet duct 44, the nose dome 42, the fan exhaust ducts 46 and access doors to the nacelle which envelop the engine around its circumference from the nose cowl aft to the exhaust duct.

In the more forward areas of the engine, it is preferred to employ a fiberglass material as the acoustic attenuating material of the fifth layer 20, (e.g., areas 31, 32), while in more rear-ward areas, such as areas 34, 35 and 36, it is preferred to use the ceramic fiber material. The fiberglass material, however, is a superior sound

United States Patent [19]

Strom et al.

[11] Patent Number: 5,020,292

[45] Date of Patent: Jun. 4, 1991

[54] DOOR CONSTRUCTION

[75] Inventors: Hans Strom; Jan Andersson, both of Astorp, Sweden

[73] Assignee: Svensk Dorrteknik AB, Sweden

[21] Appl. No.: 542,804

[22] Filed: Jun. 22, 1990

Related U.S. Application Data

[63] Continuation of Ser. No. 946,388, Dec. 23, 1986, abandoned, which is a continuation of Ser. No. 752,382, Jul. 3, 1985, abandoned.

[30] Foreign Application Priority Data

Jul. 4, 1984 [SE] Sweden 8403541

[51] Int. Cl.⁵ E06B 5/20

[52] U.S. Cl. 52/309.9; 52/309.11; 52/455; 428/151; 428/921

[58] Field of Search 52/309.9, 309.11, 291, 52/455; 428/921, 151, 464

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Primary Examiner—Richard E. Chilcot, Jr.
Attorney, Agent, or Firm—Lerner, David, Littenberg, Krumholz & Montlik

[57]

ABSTRACT

Door constructions are provided including a frame, a core, and on both the inner and outer faces of the core an iron plate at least 0.2 millimeters thick with a wooden layer adhesively secured to the outer surfaces thereof. Preferably the core provided is a material having superior heat insulating properties with a heat conductivity of between about 0.15 and 0.05 as well as a diffusion resistance at least 20 times greater than that of air. In a preferred embodiment, each of the iron plates has a wooden layer adhesively secured to both the inner and outer surfaces thereof.

10 Claims, 1 Drawing Sheet

