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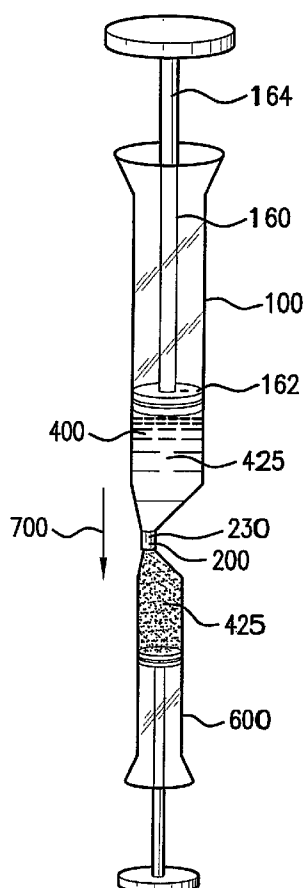
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(54) Title: FAT COLLECTION AND PREPARATION SYSTEM AND METHOD



(57) Abstract: Systems and methods for collecting and preparing antillogous fat transplantation. The system includes a centrifuge, a first larger syringe (100) having a plunger (160) with a plunger head (162), a second smaller syringe (600), and a filtering and transferring assembly including an adapter (230) coupling the first larger syringe (100) and the second smaller syringe (600). Substances, including oil, fat and a denser substance are injected into the first larger syringe (100). Centrifugation stratifies the substances into a top oil stratum, a middle fat stratum (425) and a bottom denser substance stratum. The denser substance is filtered out of the first syringe during or after centrifugation. The oil is removed through a port in the plunger head (162) of the first larger syringe (100). Fat (425) is transferred from the first larger syringe (100) to the second smaller syringe (600) through the adapter (230).

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: **B01D 21/26**(2006.01),**33/00**(2006.01);**B01L 3/12**(2006.01);**G01N 1/18**(2006.01)

USPC: 210/781,806,295,360.1,380.1,515;422/72,101,102,103;436/177;494/16;604/187,190,191,240,241

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 210/781,806,295,360.1,380.1,515;422/72,101,102,103;436/177;494/16;604/187,190,191,240,241

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,471,069 B2 (LIN et al) 29 October 2002 (29.10.2002), abstract.	14-16 and 20
X	US 3,865,731 A (SELTZ) 11 February 1975 (11.02.1975), column 1, lines 1-20 and column 3, line 30 to column 4, line 2.	14-16 and 20
X	US 5,830,359 A (KNIGHT et al) 03 November 1998 (11.03.1998), column 10, lines 13-46.	14, 15 and 20
X	US 4,364,832 A (BAILLIES) 21 December 1982 (21.12.1982), Abstract and column 6, lines 33-49.	14-16, 20, 25-27 and 30
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Y		1-9, 11-13, 17-19, 28 and 29
X	US 5,002,538 A (JOHNSON) 26 March 1991 (26.03.1991), column 2, lines 1-48 and column 4, lines 5-16.	14, 15 and 17-20
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Y		1-9, 11-13, 17-19, 28 and 29

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-9, 11-20 and 25-30, drawn to a method for preparing fat for transportation comprising centrifuging and filtering a combination of substances including oil, fat and a denser substance.

Group II, claims 10 and 21, drawn to an assembly comprising an adapter having a coupling and a filter assembly releasably coupleable with the adapter via the coupling.

Group III, claims 22-24, drawn to a syringe.

Group IV, claims 31-59, drawn to a centrifugation apparatus comprising at least one insert releasably coupled to a rotatable centrifuge member, the at least one insert including a cavity configured to receive a syringe.

Group V, claims 60-66, drawn to a method of centrifuging syringes comprising coupling an insert to a rotatable centrifuge member, the insert having at least one cavity retaining at least one syringe, the syringe containing a combination of substances; and after the coupling rotating the rotatable centrifuge member.

Group VI, claims 67-72 and 84-88, drawn to a method for preparing fat for transportation comprising injecting a dye into a syringe containing a substance including fat and centrifuging and filtering the substance and dye in the syringe.

Group VII, claim 73, drawn to a dye.

Group VIII, claims 74-77, drawn to a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container.

Group IX, claims 78-83, drawn to a syringe containing a dye.

Group X, claims 89-92, drawn to a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

The inventions listed as Groups I-XI do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Group I is a method for preparing fat for transportation comprising centrifuging and filtering a combination of substances including oil, fat and a denser substance; **while** **Group II** is an assembly comprising an adapter having a coupling and a filter assembly releasably coupleable with the adapter via the coupling; **Group III** is a syringe; **Group IV** is a centrifugation apparatus comprising at least one insert releasably coupled to a rotatable centrifuge member, the at least one insert including a cavity configured to receive a syringe; **Group V** is a method of

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centrifuging syringes comprising coupling an insert to a rotatable centrifuge member, the insert having at least one cavity retaining at least one syringe, the syringe containing a combination of substances; and after the coupling rotating the rotatable centrifuge member; Group VI is a method for preparing fat for transportation comprising injecting a dye into a syringe containing a substance including fat and centrifuging and filtering the substance and dye in the syringe; Group VII is a dye; Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container; Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group II is an assembly comprising an adapter having a coupling and a filter assembly releasably coupleable with the adapter via the coupling; **while** Group III is a syringe; Group IV is a centrifugation apparatus comprising at least one insert releasably coupled to a rotatable centrifuge member, the at least one insert including a cavity configured to receive a syringe; Group V is a method of centrifuging syringes comprising coupling an insert to a rotatable centrifuge member, the insert having at least one cavity retaining at least one syringe, the syringe containing a combination of substances; and after the coupling rotating the rotatable centrifuge member; Group VI is a method for preparing fat for transportation comprising injecting a dye into a syringe containing a substance including fat and centrifuging and filtering the substance and dye in the syringe; Group VII is a dye; Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container; Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group III is a syringe; **while** Group IV is a centrifugation apparatus comprising at least one insert releasably coupled to a rotatable centrifuge member, the at least one insert including a cavity configured to receive a syringe; Group V is a method of centrifuging syringes comprising coupling an insert to a rotatable centrifuge member, the insert having at least one cavity retaining at least one syringe, the syringe containing a combination of substances; and after the coupling rotating the rotatable centrifuge member; Group VI is a method for preparing fat for transportation comprising injecting a dye into a syringe containing a substance including fat and centrifuging and filtering the substance and dye in the syringe; Group VII is a dye; Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container; Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group IV is a centrifugation apparatus comprising at least one insert releasably coupled to a rotatable centrifuge member, the at least one insert including a cavity configured to receive a syringe; **while** Group V is a method of centrifuging syringes comprising coupling an insert to a rotatable centrifuge member, the insert having at least one cavity retaining at least one syringe, the syringe containing a combination of substances; and after the coupling rotating the rotatable centrifuge member; Group VI is a method for preparing fat for transportation comprising injecting a dye into a syringe containing a substance including fat and centrifuging and filtering the substance and dye in the syringe; Group VII is a dye; Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container; Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group V is a method of centrifuging syringes comprising coupling an insert to a rotatable centrifuge member, the insert having at least one cavity retaining at least one syringe, the syringe containing a combination of substances; and after the coupling rotating the rotatable centrifuge member; **while** Group VI is a method for preparing fat for transportation comprising injecting a dye into a syringe containing a substance including fat and centrifuging and filtering the substance and dye in the syringe; Group VII is a dye; Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container; Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group VI is a method for preparing fat for transportation comprising injecting a dye into a syringe containing a substance including fat and centrifuging and filtering the substance and dye in the syringe; **while** Group VII is a dye; Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container; Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group VII is a dye; **while** Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container; Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat

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tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group VIII is a method of introducing a dye into a container containing a substance including fat and centrifuging the substance and dye in the container: **while** Group IX is a syringe containing a dye; and Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.

Group IX is a syringe containing a dye: **while** Group X is a method of providing feedback on a fat collection and preparation system by centrifuging a fat and dye in a syringe, measuring one of a quantity of less viable fat tissue and more viable fat tissue in a syringe and adjusting as a function of the measuring step at least a part of the fat collection and preparation system and process.