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NEW PATENTS

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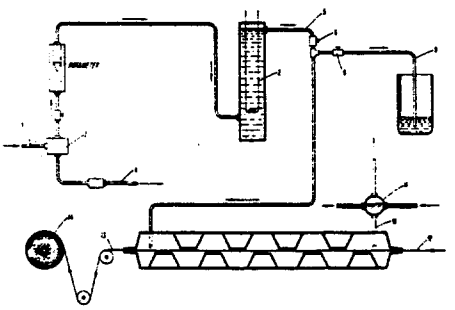
4421794

SOLVENT REMOVAL VIA CONTINUOUSLY SUPERHEATED HEAT TRANSFER MEDIUM

Homan B Kinsley assigned to James River Corporation

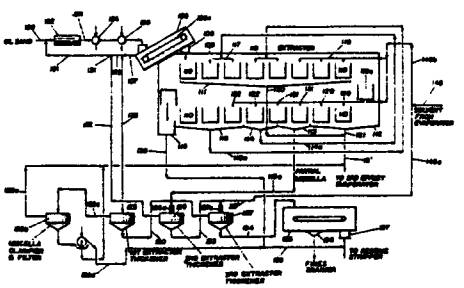


Non-aqueous solvents are removed from a substrate, e.g., paper, by contacting the substrate with a condensable, vaporous heat transfer medium that is in a superheated state, e.g., superheated steam, and maintaining said substrate in contact with said superheated heat transfer medium, while also maintaining said heat transfer medium in superheated state, for a period of time sufficient to effect removal of said non-aqueous liquid from said substrate without concomitant condensation of said superheated heat transfer medium thereon. The superheated heat transfer medium, as well as being the source of energy for evaporating the solvent, acts as a solvent vapor transport medium. Upon evaporation of the solvent, the solvent vapor-heat transfer medium mixture can be sent to a recovery zone to easily recover said solvent via condensation of the mixture and thereby avoid the discharge of said solvent vapors into the atmosphere.

4422901

APPARATUS FOR THE CONTINUOUS SOLVENT EXTRACTION OF BITUMEN FROM OIL-BEARING SAND

George Karnofsky assigned to Dravo Corporation



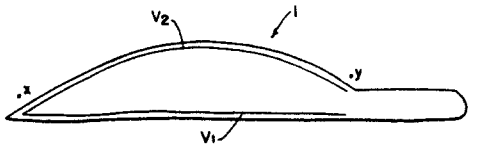
In a continuous process for the extraction of crude refinery stock from oil-bearing sand, miscella produced earlier in the process is returned and mixed with oil-bearing sand to provide a feed slurry which, after heating, is separated into two streams, one of which is comprised predominantly of the coarser sand particles in the feed sand and miscella and the other of which contains most of the fine sand particles in the feed slurry. Miscella extracted by hot solvent from one of these streams is recycled to produce at least part of the miscella returned to produce the feed mix, and the other stream is processed to remove at least most of the sand and yield a miscella which is then distilled to separate the solvent for recycle to the extraction stages. Generally stated, a decantation step involving countercurrent extraction of the feed slurry will be used with sands which are comprised largely of fine particles. Percolation and separation of miscella along with solvent extract of bitumen from the sand is used where the sand in the feed mix is predominantly coarse. The spent sand

from both streams is combined, and being still wet with solvent, is subjected to steam stripping, yielding solvent vapor. The hot vapors which result are first used to preheat the feed slurry followed by condensation and separation of solvent, which is recycled into the system, and water. Heat is also recuperated from the spent sand to preheat the feed slurry.

4423735

DYNAMIC ORTHOTIC DEVICE CONTAINING FLUID

John E Comparetto

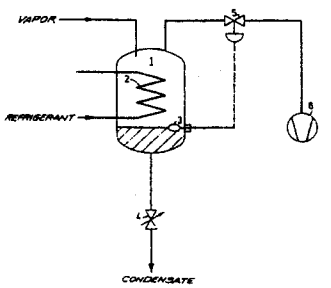


An orthotic apparatus to help resuppinate the foot after the initial contact phase of gait. The device consisting of a flexible envelope containing a fluid with a cambered upper surface to flex upwardly upon the generation of a fluid wave along the longitudinal axis of the foot.

4423766

VACUUM CONDENSATION APPARATUS

Karl-Hein Bernhardt, Helmut Strzala, Braunfels, Federal Republic Of Germany assigned to Arthur Pfeiffer Vakuumtechnik Wetzlar GmbH

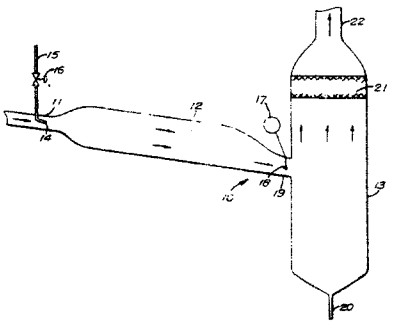


Apparatus for condensing vapors at reduced pressure including a cooled vapor condenser having a liquid level sensor therein with a vacuum pump being connected by way of a control valve for drawing vapor from the vapor chamber of the condenser. The liquid level sensor opens and closes the control valve to control drawing of vapor from the vapor chamber in accordance with the level of liquid in the condenser.

4424680

INEXPENSIVE METHOD OF RECOVERING CONDENSABLE VAPORS WITH A LIQUIFIED INERT GAS

Ronald D Rothchild

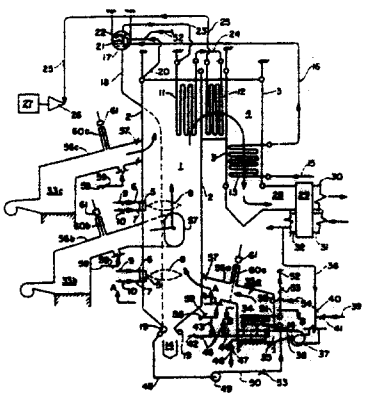


Method and apparatus for recovering, as liquid, condensable vapor contained in a gas stream by refrigerating the gas stream by injecting the liquified phase of an inert gas, such as nitrogen, mixing the combined gas stream and liquified inert has, and separating the condensed condensable vapor from the remaining gas stream and inert gas.

4424765

STEAM GENERATOR HAVING EXTERNAL FLUIDIZED BED COMBUSTION MEANS

Charles Strohmeyer assigned to Electrodyne Research Corporation



The invention provides a means for more effectively adapting fluidized bed combustors for retrofit of existing boilers for burning of low grade inexpensive solid fuels. The operating discharge gas from a fluidized bed combustor is