



(51) International Patent Classification:
C10G 67/04 (2006.01) *B01D 11/04* (2006.01)

(21) International Application Number:
PCT/CA2020/050145

(22) International Filing Date:
05 February 2020 (05.02.2020)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
19155542.4 05 February 2019 (05.02.2019) EP

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(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,

(54) Title: METHOD AND SYSTEM FOR RE-REFINING AND UPGRADING USED OIL

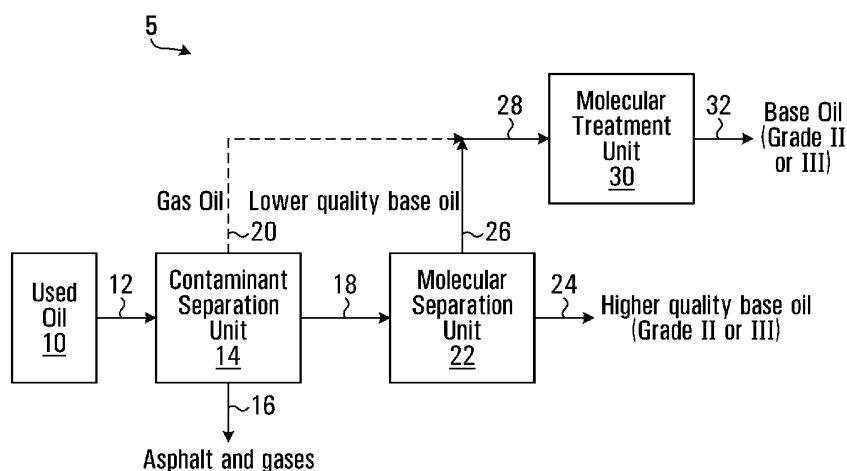


FIG. 1

(57) Abstract: A method for re-refining used oils comprises contacting feedstock comprising purified used oil with extraction solvent to perform continuous liquid-liquid solvent extraction, to produce an extract stream comprising the extraction solvent and an extract dissolved in the extraction solvent. The feedstock and the extraction solvent are agitated by a variable speed agitator during the solvent extraction at a selected agitation speed. The extract is separated from the extraction solvent and subjected to a continuous flow liquid phase hydrogenation treatment to produce an oil product. A system for performing the method includes a purification unit for purifying the used oil; an extraction column for extracting the extract from the feedstock; and a continuous flow liquid phase hydrogenation unit. The extraction column comprises an agitator configured to agitate the feedstock and the extraction solvent flowing through the extraction column at a variable agitation speed.

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SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*