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- (71) Applicant: **DHARMA KARMA FOUNDATION**
[US/US]; 48 Heather Dr, Atherton, CA 94027 (US).
- (71) Applicant (for VC only): **STROBL, Johannes** [AT/AT];
Große Neugasse 26, 1040 Wien (AT).
- (72) Inventors: **FUCHS, Josef**; Mühlbergstraße 18/9, 1140
Wien (AT). **FUCHS, Johannes**; Polgarstrasse 13B/6, 1220
Wien (AT). **CHIMANI, Florian**; Frischauferstraße 6, 4540
Pfarrkirchen (AT). **BHANDARI, Aditya Anil**; 175 W
Saint James St, Unit 909, San Jose, California 95110
(US). **WALLMÜLLER, Andreas**; Mostviertler Höhen-
straße 25, 3340 Waidhofen an der Ybbs (AT). **FAHRN-
GRUBER, Michael**; Bergstraße 7, 3341 Ybbsitz (AT).

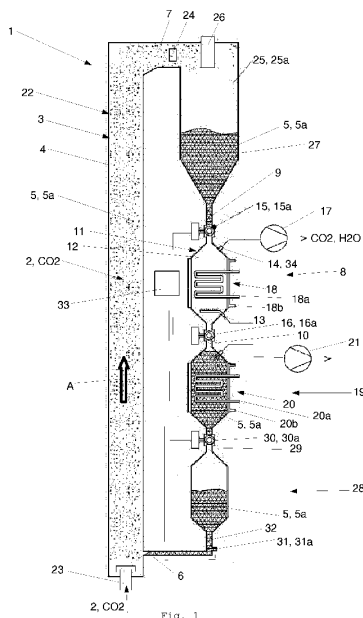
FLEISS, Benjamin; c/o Technische Universität Wien - In-
stitut für Verfahrenstechnik, Umwelttechnik und technis-
che Biowissenschaften, Getreidemarkt 9, 1060 Wien (AT).
HOFBAUER, Hermann; Technische Universität Wien -
Institut für Verfahrenstechnik, Umwelttechnik und technis-
che Biowissenschaften, Getreidemarkt 9, 1060 Wien (AT).
MÜLLER, Stefan; Preindlgasse 3/6, 1130 Wien (AT).

(74) Agent: **SONN PATENTANWÄLTE GMBH & CO KG**;
Riemergasse 14, 1010 Wien (AT).

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(54) Title: PLANT AND METHOD FOR CAPTURING CARBON DIOXIDE



(57) Abstract: A plant (1) for capturing carbon dioxide (CO₂) from a carbon di-ox-
ide laden gas stream (2), comprising: an adsorption device (3) with a container (4)
for containing an adsorbent (5) made of solid adsorbent particles (5a) for binding the
carbon dioxide (CO₂) to the adsorbent (5), the ad- sorption device (3) having an ad-
sorbent inlet (6) and an adsorb- ent outlet (7), a regeneration device (8) for separating
the bound carbon dioxide (CO₂) from the adsorbent (5), the regeneration device (8)
having an adsorbent intake (9) and an adsorbent outtake (10), wherein the adsorbent
outlet (7) is connected to the adsorb- ent intake (9) and the adsorbent outtake (10)
is connected to the adsorbent inlet (6), wherein a fixed bed regenerator (11) of the re-
generation device (8) having a reservoir (12) for the adsorbent (5) and a fluid outlet (14)
for withdrawing at least carbon dioxide (CO₂) from the reservoir (12), an intake valve
(15) being arranged in the adsorbent intake (9), an outtake valve (16) being arranged
in the adsorbent out- take (10), wherein the intake and the outtake valve (15, 16) are
con- figured to be selectively transferred between an open state al- lowing passage of
the adsorbent (5) through the adsorbent intake (9) into the reservoir (12) and through
the adsorbent outtake (10) out of the reservoir (12), respectively, and a closed state
blocking passage of the adsorbent (5) through the adsorbent in- take (9) into the reser-
voir (12) and through the adsorbent out- take (10) out of the reservoir (12) in an es-
sentially airtight manner, respectively, a vacuum generation unit (17) for generating
a vacuum inside the reservoir (12) in the closed state of the intake and outtake valve
(15, 16), respectively.

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