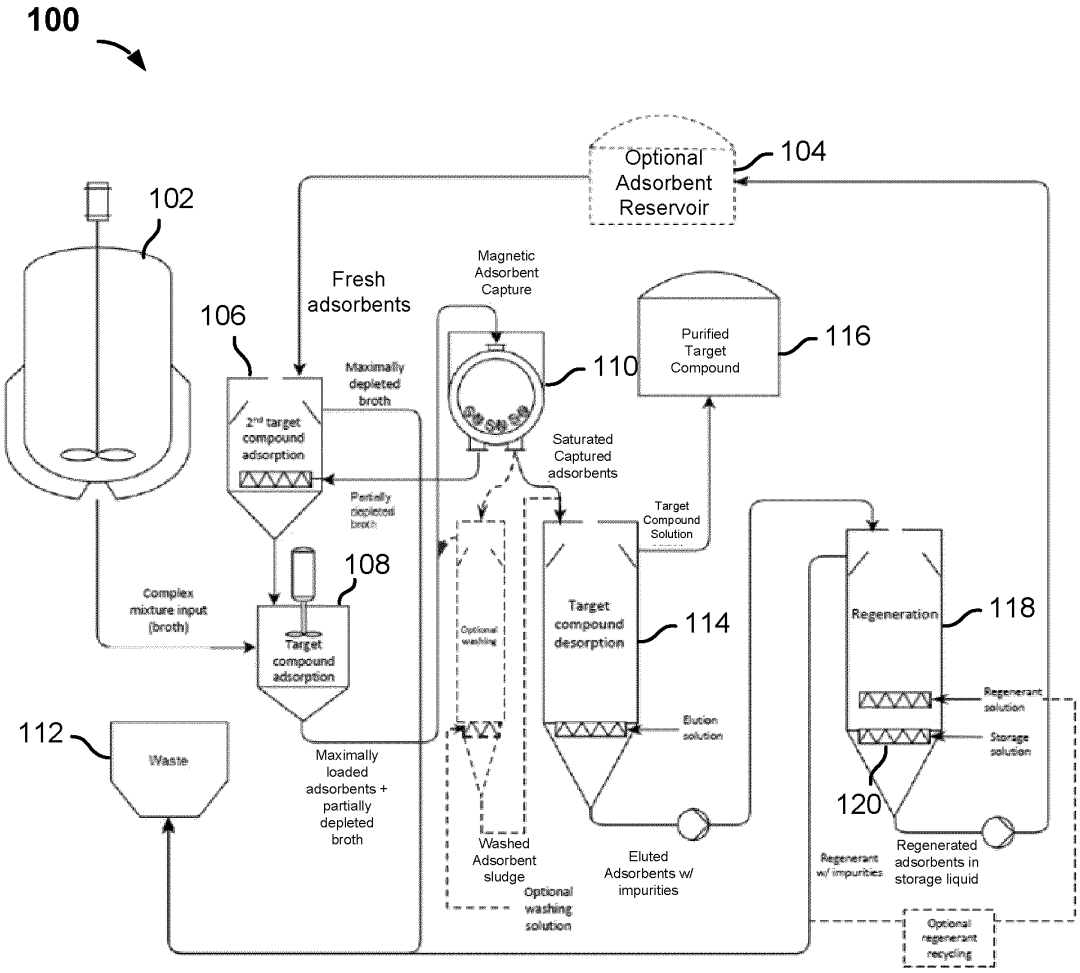

100
Optional Adsorbent Reservoir
104
102
Fresh adsorbents
Magnetic Adsorbent Capture
106
Maximally depleted broth
110
Purified Target Compound
116
2nd target compound adsorption
Saturated Captured adsorbents
Partially depleted broth
Target Compound Solution
108
Complex mixture input (broth)
Target compound adsorption
Optional washing
Target compound desorption
114
Regeneration
118
Regenerant solution
Storage solution
Elution solution
112
Waste
Maximally loaded adsorbents + partially depleted broth
120
Washed Adsorbent sludge
Eluted Adsorbents w/ impurities
Regenerant w/ impurities
Regenerated adsorbents in storage liquid
Optional washing solution
Optional regenerant recycling

FIG. 1

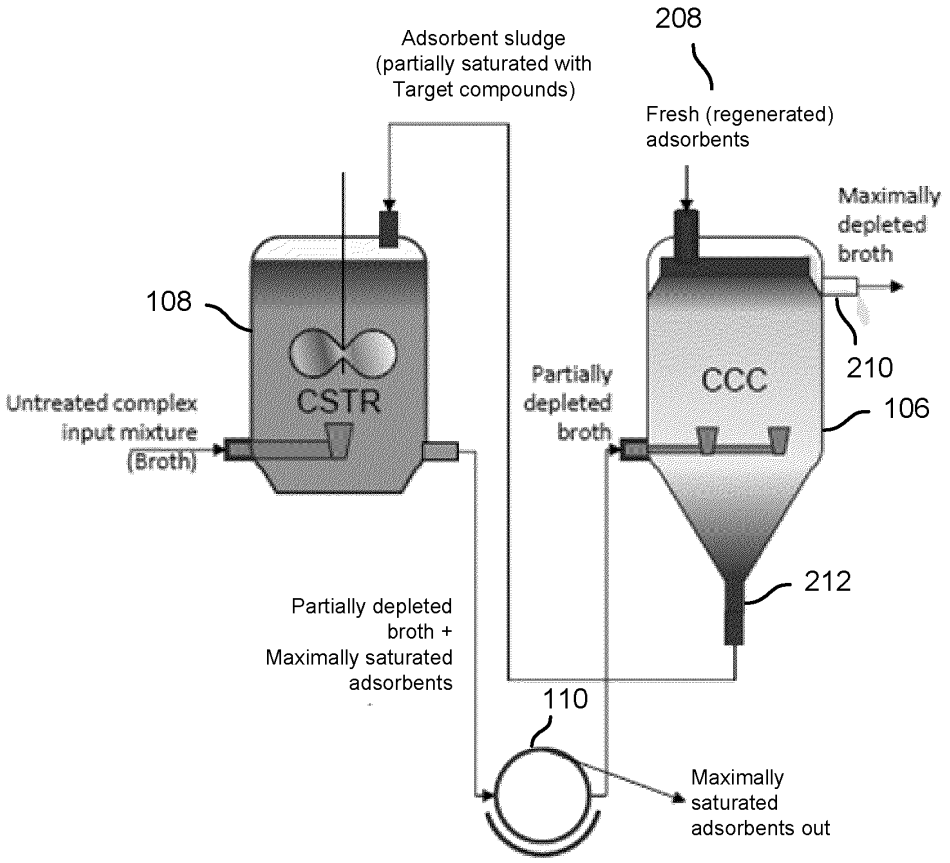

208
Adsorbent sludge
(partially saturated with
Target compounds)
Fresh (regenerated)
adsorbents
Maximally
depleted
broth
108
CSTR
Untreated complex
input mixture
(Broth)
Partially
depleted
broth
CCC
210
106
212
Partially depleted
broth +
Maximally saturated
adsorbents
110
Maximally
saturated
adsorbents out

FIG. 2

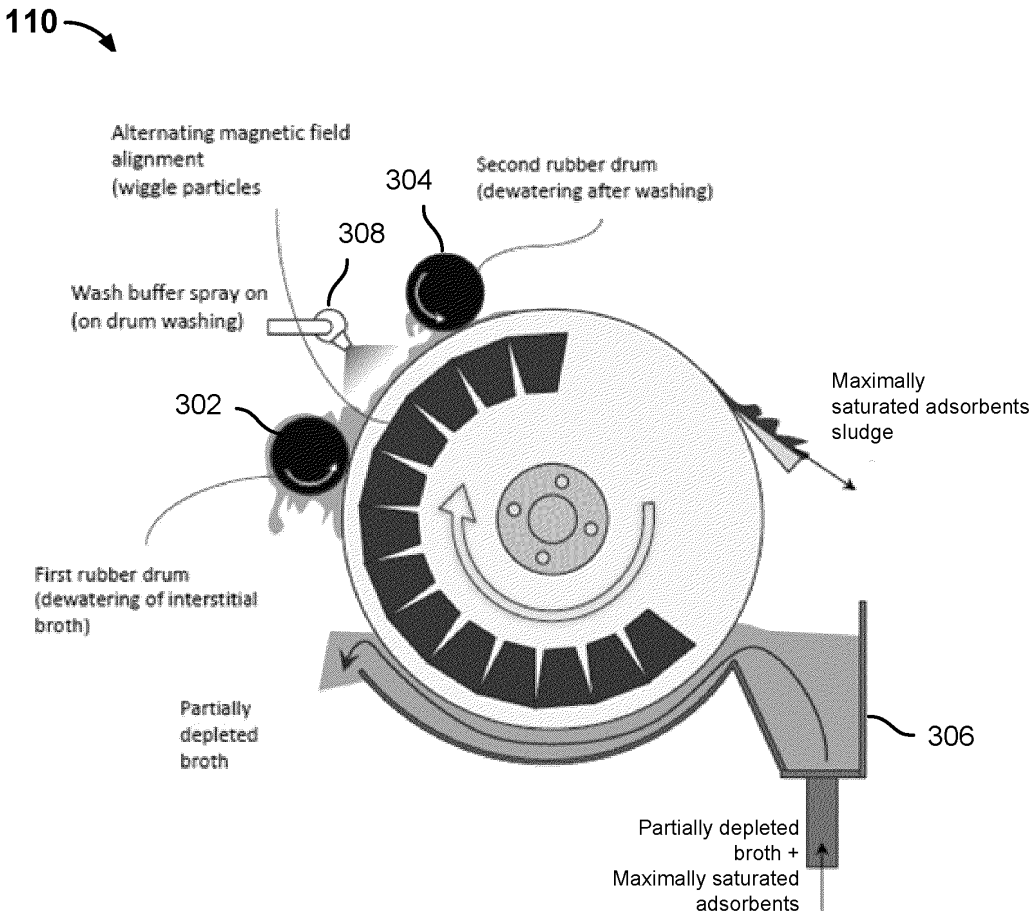

110
Alternating magnetic field alignment (wiggle particles
304
Second rubber drum (dewatering after washing)
308
Wash buffer spray on (on drum washing)
302
Maximally saturated adsorbents sludge
First rubber drum (dewatering of interstitial broth)
Partially depleted broth
306
Partially depleted broth + Maximally saturated adsorbents

FIG. 3

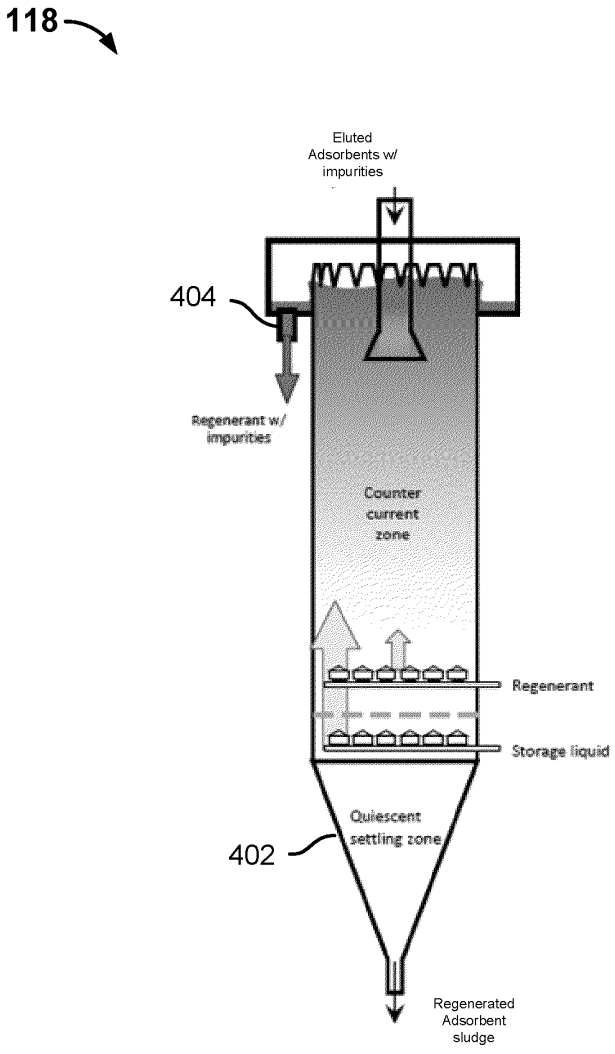

118
Eluted Adsorbents w/ impurities
404
Regenerant w/ impurities
Counter current zone
Regenerant
Storage liquid
Quiescent settling zone
402
Regenerated Adsorbent sludge

FIG. 4