

1	WITH CONTROL RESPONSIVE TO SENSED CONDITION	39	COMPRESSING AND INDIRECT COOLING OF GASEOUS FLUID MIXTURE TO SEPARATE
2	.Electric or electrostatic field (e.g., electrostatic precipitation, etc.)	40	.And use of heat absorbing agent
3	..Concentration sensed	41	.And solid sorption
4	..Temperature sensed	42	.And liquid contact (e.g., scrubbing, sorption, etc.)
5	..Sparking sensed	43	SELECTIVE DIFFUSION OF GASES
6	..Current sensed	44	.Selective diffusion of gases through immobilized liquid
7	..Voltage sensed	45	.Selective diffusion of gases through substantially solid barrier (e.g., semipermeable membrane, etc.)
8	.Concentration sensed	46	..Degasification of liquid
9	..pH sensed	47	..Nitrogen or nitrogen containing compound permeates barrier
10	..Humidity sensed	48	..Halogen containing compound permeates barrier
11	..Flow of fluid mixture to sorber stopped or diverted to other equipment, or sorbent regenerated	49	..Sulfur containing compound permeates barrier
12	..Gas flow rate modified	50	..Organic compound permeates barrier
13	..Sorbent flow rate modified	51	..Carbon dioxide or carbon monoxide permeates barrier
14	.Temperature sensed	52	..Water vapor permeates barrier
15	..And pressure sensed	53	..Helium permeates barrier
16	..Modification of flow rate of liquid which is added to gas	54	..Oxygen permeates barrier
17	..Cooling	55	..Hydrogen permeates barrier
18	..Heating	56	...Elemental metal or alloy barrier
19	.Pressure sensed	57	ELECTRIC OR ELECTROSTATIC FIELD (E.G., ELECTROSTATIC PRECIPITATION, ETC.)
20	..Apparatus cleaned	58	.With addition of solid, gas, or vapor
21	..Sorbent regenerated	59	..Electrode treating (e.g., coating, cleaning, etc.)
22	..Gas flow rate modified	60	..Heating or cooling
23	.Gas flow rate sensed	61	..Solid is electrically conducting
24	.Liquid level sensed	62	..Agglomerating gas-borne particles
25	WITH RECORDING OR SIGNALING CONDITION	63	.And nonelectrical separation of fluid mixture
26	WITH TIMING OF OPERATION	64	..Liquid addition to gaseous fluid mixture
27	MAGNETIZED PARTICLE BED	65	...Liquid addition precedes electrical precipitation
28	MAGNETIC SEPARATION	66	...With heating or cooling
29	SOUND WAVES USED	67	..By heating or cooling
30	.Degasification of liquid		
31	DIFFERENCE IN MOLECULAR VELOCITY, DENSITY, OR MOMENTUM OF GASES USED		
32	.Passing gases through nozzle		
33	..Directing gas streams toward one another		
34	.Centrifugal force		
35	..Created by rotating equipment		
36	LIQUID-SOLID SLURRY USED		
37	.Organic compound removed from gas		
38	.Halogen containing compound removed from gas		

68	..Including cleaning or regeneration of separating means (e.g., particulate bed filter, deflector, etc.)	96	..Plural pressure varying steps (e.g., pressure swing adsorption, etc.)
69	..Distinct separation step precedes electric or electrostatic treatment	97	...Sweep gas used
70	..Distinct separation step follows electric or electrostatic treatment	98	....Feed gas or constituent thereof is sweep gas
71	.With addition of liquid to gaseous fluid mixture	99	....With heating or cooling
72	..Vaporization of liquid	100	....Stepped pressure reduction
73	.With heating or cooling	101	.....Vacuum applied
74	.With cleaning of collector electrode	102	....Vacuum applied
75	..By liquid flushing	103	...Stepped pressure reduction
76	..By scraping or vibrating	104	..Sweep gas used
77	.Continuously moving electrode	105	...Feed gas or constituent thereof is sweep gas
78	.Including baffling, deflection, or restriction of gas flow	106	..With heating or cooling
79	.Plural separate stages or zones (e.g., separate ionization and collection regions, etc.)	107	.Moving sorbent
80	..Pulsing or time-varying electric field (e.g., AC, pulsed DC, etc.)	108	..Fluidized bed
81	.Pulsing or time-varying electric field (e.g., AC, pulsed DC, etc.)	109	...Having gravity flow of sorbent from zone to zone
82	CHROMATOGRAPHY	110	..Gravity flow of sorbent from zone to zone
83	.Liquid supported on surface of capillary column	111	...Sweep gas used
84	.Liquid supported on particulate packing	112	....Steam is sweep gas
85	.Including use of gas flow distributor in column	113	..Rotating housing containing fixed sorbent or rotating plurality of housings
86	.Plural separate columns	114	.With plural indirect heat transfer steps on solid sorbent or gaseous fluid mixture or constituent thereof
87	.With heating or cooling	115	..Heating and cooling
88	.Specific column packing or sorbent material (e.g., particle size, composition, etc.)	116	.Inorganic gas or liquid particle sorbed (e.g., vapor, mist, etc.)
89	.Injection, per se, without separation	117	..Water sorbed
90	SOLID SORPTION	118	...Plural separating treatments of gas by solid sorbent to remove water
91	..Soluble or deliquescent material used	119	...And regeneration of any solid sorbent
92	..And liquid contact (e.g., scrubbing, sorption, etc.)	120	....Heating or cooling
93	..Sweep gas used on solid sorbent	121	...And regeneration of solid sorbent
94	..And recycle or reuse of contact liquid for further contact	122	....Sweep gas used
95	.Including reduction of pressure	123	....Hot sweep gas
		124	.....And cooling of sweep gas
		125	.....And cooling of solid sorbent
		126	....By heating
		127	..Noble gas sorbed
		128	..Nitrogen containing compound sorbed
		129	...Nitrogen oxide sorbed

130	..Nitrogen sorbed	165	...And heating
131	..Halogen or halogen containing compound sorbed	166	....Liquid recycled or reused
132	...Chlorine or chlorine containing compound sorbed	167	....Vaporized component of contact liquid is stripping gas
133	..Metal or metal containing compound sorbed	168	....Steam is stripping gas
134	..Mercury sorbed	169	...Liquid recycled or reused
135	..Sulfur containing compound sorbed	170	...Air is stripping gas
136	..Hydrogen sulfide sorbed	171	...Inert stripping gas
137	..Sulfur dioxide or sulfur trioxide sorbed	172	..By reduction of pressure (e.g., flashing, etc.)
138	..Oxygen or ozone sorbed	173	...And heating
139	..Carbon dioxide sorbed	174	....Liquid recycled or reused
140	..Carbon monoxide sorbed	175	...Vacuum applied
141	..Organic gas or liquid particle sorbed (e.g., vapor, mist, etc.)	176	...Removed gas recycled
142	..Halogen containing compound sorbed (e.g., phosgene, etc.)	177	...Liquid recycled or reused
143	..Hydrocarbon sorbed	178	..By heating
144	...Alkene sorbed	179	...Liquid recycled or reused
145	...Alkyne sorbed (e.g., acetylene, etc.)	180	....Liquid cooling step before being recycled
146	...Gasoline sorbed	181	...Sulfur compound removed
147	...Benzene ring containing compound sorbed	182	...Halogen compound removed
148	..And regeneration	183	...Carbon dioxide removed
149	LIQUID CONTACTING (E.G., SORPTION, SCRUBBING, ETC.)	184	...Organic compound removed
150	..Including foaming of liquid to aid in the separation	185	..By liquid flow modifying or mechanical agitating
151	..Mechanical agitation of liquid body to contact gaseous fluid mixture	186	..Liquid recycled or reused
152	..Coagulating or flocculating agent	187	..And recycle or reuse of contact liquid for further contact
153	..Hydrate inhibitor	188	..After separation of liquid from contact liquid
154	..Surfactant or wetting agent	189	...And separation of solid from contact liquid
155	..Defoaming or antifoaming agent	190	...By liquid-liquid extraction or formation of azeotrope
156	..And degasification of a liquid	191	...By stripping with gas
157	..Defoaming	192	...By reduction of pressure (e.g., flashing, etc.)
158	..Degasification step occurs first, with removed gas subsequently contacted by liquid	193	...By heating (e.g., fractional distillation, etc.)
159	..By stripping with gas	194	....Indirect heat exchange
160	...And reduction of pressure (e.g., flashing, etc.)	195	..After separation of solid from contact liquid
161	....And heating	196	...By filtration
162	.....Steam is stripping gas	197	...By gravity separation
163	....Liquid recycled or reused	198	..And deflection to remove liquid particles from gas
164	....Feed gas or constituent thereof is stripping gas	199	..Liquid contact in plural serial stages
		200	...Removal of solid or liquid particles from gas
		201	...Reduction of pressure during liquid contact

202	..Removal of solid or liquid particles from gas	234	..Metal or metal containing compound sorbed
203	..Reduction of pressure	235	..Sulfur or sulfur containing compound sorbed
204	.And recycle of gas for further contact	236	..Carbon dioxide sorbed
205	.And separation of solid from contact liquid	237	.Organic gas, liquid particle, or solid particle sorbed (e.g., vapor, mist, dust, etc.)
206	.And separation of liquid from contact liquid	238	..Alkyne sorbed (e.g., acetylene, etc.)
207	..By stripping with gas	239	..Cyclic compound sorbed
208	..By reduction of pressure (e.g., flashing, etc.)	240	..Alkene sorbed
209	..By heating (e.g., fractional distillation, etc.)	241	DEGASIFICATION OF LIQUID
210	.On surface extending mass	242	.Defoaming
211	..Particulate media, fibrous media, or packing elements	243	.Plural successive degassing treatments
212	...And cleaning of particulate media, fibrous media, or packing elements	244	..Boiler feed water degassing
213	..Apertured partition member	245	..By stripping with gas
214	.And filtration of gas	246	...And reduction of pressure (e.g., flashing, etc.)
215	..Including movement of filter	247	..By reduction of pressure (e.g., flashing, etc.)
216	.And deflection	248	...And liquid flow modifying or mechanical agitating
217	..Liquid is in form of curtain	249	...And heating
218	..Including movement of deflector	250	...And heating
219	..Including rotation of liquid, gaseous fluid mixture, or gas-liquid mixture through 360 degrees in stationary apparatus	251	..By heating
220	...With heating or cooling	252	...And liquid flow modifying or mechanical agitating
221	..Deflection in plural serial stages	253	.Emulsion breaking or multiple liquid separating
222	...Using diverse type deflectors	254	.And subsequent handling of evolved gas, stripping gas, or residue liquid
223	.In plural serial stages	255	..Evolved gas removed by sweep gas
224	..Liquid sprays	256	..For indirect heat exchange
225	..With heating or cooling	257	...Gas condensed
226	.Gaseous fluid mixture discharged against or beneath surface of liquid body	258	..Gas recycled or further separated
227	.With heating	259	..Liquid further separated
228	.With cooling	260	.By liquid flow modifying or mechanical agitating
229	..Cooling before liquid contacting	261	..Centrifugal force
230	.Inorganic gas, liquid particle, or solid particle sorbed (e.g., vapor, mist, dust, etc.)	262	..Impinging on baffle
231	..Water sorbed	263	.By stripping with gas
232	..Nitrogen or nitrogen containing compound sorbed	264	..Steam is stripping gas
233	..Halogen or halogen containing compound sorbed	265	..Nitrogen is stripping gas
		266	.By reduction of pressure (e.g., flashing, etc.)
		267	DEFLECTING
		268	.And filtering
		269	.Centrifugal force
		270	..Created by rotating equipment

- 271 ..Tangential gas inflow (e.g., cyclone, etc.)
- 272 .Tortuous flow path
- 273 **FILTERING**
- 274 .Through particulate solids
- 275 ..Moving bed
- 276 ..With cleaning of filter bed
- 277 .Moving filter
- 278 .With cleaning of filter
- 279 ..By use of gas
- 280 ...Pulsed gas flow
- 281 ..By use of liquid
- 282 ..By mechanical manipulation
- 283 .With heating of filter
- 284 .And reduction of pressure
- 285 .Coated or chemically treated filter
- 286 .Plural separate media
- 287 ..In series
- 288 **HEAT EXCHANGING**
- 289 .Cold wall-hot wall thermal diffusion
- 290 .Condensing to solid
- 291 **MISCELLANEOUS**

CROSS-REFERENCE ART COLLECTIONS

- 900 **SOLID SORBENT**
- 901 .Activated carbon
- 902 .Molecular sieve
- 903 ..Carbon

FOREIGN ART COLLECTIONSFOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**

