

1	WITH CONDITION RESPONSIVE MEANS	23	WITH MEANS FOR FURNISHING
2	.For controlling outlet valve		AUXILIARY FLUID TO MATERIAL OR
3	..In response to location of		APPARATUS
	inner boundary of heavy	24	.Energy of fluid utilized for
	component		driving bowl
4	..In response to centrifugal	25	.Gas other than air
	force	26	.Air at atmospheric, or greater,
			pressure
5	.For controlling inlet valve	27	.Liquid
6	..In response to level of liquid-	28	..Moving radially inwardly toward
	type material in bowl or in		axis of rotation of bowl
	reservoir for supplying bowl	29	..Furnished at plural locations
7	.For controlling drive of (a)	30	..Including one or more valves in
	bowl or (b) driven means		incoming path
	within bowl	31	INCLUDING PLURALITY OF SEPARATE
8	..In response to load imposed		AND DISTINCT BOWLS
	upon driven means	32	.And means external of bowls for
9	..In response to speed of bowl or		conducting material
	rotarily-driven means		therebetween
	therewithin	33	.Having bowls equally spaced from
10	WITH MEANS FOR INDICATING,		a central axis of rotation for
	INSPECTING, MEASURING,		orbiting thereabout
	SIGNALING OR TESTING	34	.Having bowls spaced along common
11	WITH CYCLIC OR TIME CONTROL MEANS		axis of rotation
12	INCLUDING MEANS OR STRUCTURE FOR	35	BOWL AND MEANS EXTERNAL THEREOF
	PROMOTING SAFETY		FOR RECIRCULATING MATERIAL
13	WITH MEANS FOR EXCHANGING HEAT	36	WITH MEANS FOR FILTERING
14	.Comprising or including means	37	PROCESS
	for cooling	38	INCLUDING SEALING MEANS
15	WITH MEANS FOR LUBRICATING	39	.For protecting evacuated, bowl-
16	INCLUDING PLURALITY OF MINIATURE		enclosing housing against
	BOWLS (E.G., TEST TUBES)	40	gaseous infiltration
	DISTRUBUTED ABOUT ROTATABLE	41	.Comprising seal, or element
	CARRIER AND READILY REMOVABLE		cooperating therewith, movable
	THEREFROM	42	axially for controlling outlet
17	.And means for introducing either		on periphery of bowl
	material or auxiliary fluid	41	.For sealing between stationary
	into bowls		and moving elements
18	..Including conduit of flexible	42	INCLUDING DRIVEN MEANS AT LEAST
	umbilical cable type		PARTIALLY EXTERNAL OF BOWL FOR
19	.And means for rotating each bowl		MOVING MATERIAL THERETO OR
	about own axis		THEREFROM
20	.Having bowls, or holders	43	ROTATABLE BOWL
	therefor, pivotably attached to	44	.Comprising plurality of bowls
	carrier for tilting during		partly or wholly within one
	rotation of carrier		another
21	.Comprising flexible bowls	45	.Including flexible, removable
	embraced by pockets provided		lining therein
	therefor in carrier	46	.Including bearing means adapted
22	INCLUDING INTRODUCTION OF		to enable bowl to establish
	DIFFERING-WEIGHT FLUIDS (E.G.,		dynamic axis of rotation
	LIQUIDS) FOR COUNTERCURRENT		
	FLOW		

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| 47 | .Including means for imparting other movement to bowl in whole or in part before, during or after its axial rotation | 64 | .Having structural provision for facilitating cleaning (e.g., quick take apart) |
| 48 | ..Axial movement of one portion of bowl wall relative to another (e.g., for discharging) | 65 | .Vertically-oriented, and including structural provision for bottom entry of material |
| 49 | .Driven by energy of material supplied | 66 | .Including structure located within bowl and defining axially-extending, helical flow path |
| 50 | .Including driven material-moving means therein | 67 | .Including structure located within vertically-oriented bowl and extending outwardly from central region (e.g., axis) thereof |
| 51 | ..Plural driven means | 68 | ..Comprising plurality of elements, each concentrically encircling axis of bowl and spaced therealong |
| 52 | ..Rotatably driven coaxially with bowl, but differing as to direction or speed | 69 | ...Each extending generally normally to region, and having surface displaying three-dimensional configuration |
| 53 | ...Including element having helical blade | 70 | ...Each extending away from region with significant downward, as well as significant outward, component (e.g., nested cones) |
| 54 | ...Modified blade | 71 | ...And the plurality divided vertically into two or more, physically separate or functionally distinct groups |
| 55 | ...Including plurality of discrete pushing or scraping elements moving proximate to material collecting surface of bowl | 72 | ...And extending therebeyond generally downwardly |
| 56 | .Including discharge-related structure in nature of (a) outlet having device for controlling quantity of flow, (b) element associated with pickup of material and adjustable for varying quality of flow, or (c) static scraper or the like for engaging material in moving bowl | 73 | ...And one or more elements having surface displaying three-dimensional configuration |
| 57 | ..Element associated with pickup of material and adjustable for varying quality of flow | 74 | ..Comprising plurality of axially-extending, plate-like elements, each having its inner edge lying along central region |
| 58 | ..Static scraper or the like for engaging material in moving bowl | 75 | ...And each extending outwardly in curve of changing or constant radius |
| 59 | ...And structure to receive or guide material loosened | 76 | .Including plurality of axially-extending, tubular elements located within vertically-oriented bowl |
| 60 | .Including housing for bowl | 77 | ..Each element concentric with axis of bowl |
| 61 | ..And means for reducing, and maintaining, pressure in housing below that of environment | 78 | ...And at least one element having other-than-circular periphery |
| 62 | ..Serving to support bowl from above | | |
| 63 | ..For vertically-oriented bowl, and having plural receivers at top for separated components | | |

- 79 .Including plurality of axially-
extending, plate-like elements
located within vertically-
oriented bowl
- 80 .Including plurality of shelf-
like elements located within
vertically oriented bowl and
extending generally
horizontally inwardly from
wall thereof
- 81 .Material of bowl wall
- 82 **INCLUDING VIBRATION DAMPING MEANS**
- 83 **INCLUDING BEARING STRUCTURE**
- 84 **INCLUDING SPECIFIC DEVICE OR
STRUCTURE FOR DRIVING OR
CONTROLLING BOWL**
- 85 **MISCELLANEOUS**

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OR MORE GASES**
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