

1	METHOD OF OPERATION	27	.Pitch adjustment and throttle regulation with condition sensing means
2	HAVING FRANGIBLE OR FUSIBLE PART OR CONNECTION		
3	ACTUATION DIRECTLY RESPONSIVE TO MAGNETIC OR ELECTRICAL EFFECT	28	..Temperature responsive control
4	ROTARY SKIN FRICTION TYPE (E.G., MAGNUS ROTOR, ETC.)	29	..Drive engine intake air responsive control
5	WITH ILLUMINATION MEANS	30	..Electrical control or sensing means
6	DRIVEN BY PULSATING OR DIVERSE WORKING FLUID	31	WITH CONTROL MEANS RESPONSIVE TO NON-CYCLIC CONDITION SENSING, CENTRIFUGAL ACTUATION, TORQUE OR THRUST
7	WORKING MEMBER SUPPORTED ON ENDLESS FLEXIBLE CARRIER		
8	.Feathering blades	32	.Control of drive brake or clutch
9	WITH MEANS POSITIONING FLUID CURRENT DRIVEN IMPELLER RELATIVE TO FLOW DIRECTION	33	.Plural distinct impellers having related control
10	.Offset relative to flow direction	34	..Synchronizing
11	..Upstream pivotal mounting	35	.With electrical means comparing and reducing error related to preset datum
12	..Responsive to folding or feathering of flow-aligned vane	36	.Plural diverse condition responsive
13	..Horizontal deflection relative to flow-aligned vane	37	..Relative ambient condition sensing (e.g., temperature, density, wind force, etc.)
14	...With impeller brake or stop	38	..Drive engine condition excluding shaft speed or torque
15	...And responsive to transverse vane	39	.Temperature or icing condition responsive
16	...Biased to position by weight of parts	40	.Responsive to relative working fluid velocity
17	.Feathering cycle related to flow direction	41	..Natural fluid current
18	WITH GYROSCOPIC REFERENCE MEANS FOR ROTOR CONTROL	42	.Pressure or altitude responsive
19	SINGLE BLADE ROTARY IMPELLER WITH COUNTERBALANCE	43	.Responsive to condition of torque or thrust of device or driving or driven means or mechanism
20 R	DRIVE BY FLUID REACTION JET ON WORKING MEMBER	44	.Impeller rotation speed responsive
21	.Combustion chamber carried by member	45	..Valve element directly movable by centrifugal force
22	..Air-ingestion rotor tip unit	46	..Including pitch lock or adjustable stop
20 A	.Articulated or flexible connection	47	..Control by means of separate motor
23	WITH MEANS MOVING WORKING FLUID DEFLECTING WORKING MEMBER PART DURING OPERATION (E.G., AILERON, ETC.)	48	...Motor carried by impeller
24	.Cyclic movement of member or part	49	..Including reset or manual override of control
25	INTERRELATED CONTROLS FOR IMPELLER AND DRIVE MEANS	50	...Of centrifugal weight governor
26	.Pitch adjustment related to drive brake or clutch operation	51	..Centrifugal mass moved along guided or lineal path
		52	..Centrifugal mass coaxial with impeller

53	...Pivot axis parallel to rotation axis	84	BUOYANT OR INFLATABLE WORKING MEMBER
54	OPERATED BY ART DEVICE	85	FLOAT SUPPORTED
55	.Vehicular device	86	.Buoyant hub or rim
56	.Runner supported rocking device	87	RADIALLY EXTENSIBLE OR RETRACTIBLE ROTOR WORKING MEMBER
57	..Inertial actuation		
58	..Continuous impeller rotation	88	.Variable work surface or non-rigid connection
59	.Pivot supported swinging device	89	.Having pitch adjustment
60	.Integral with or directly attached to rotary device or part (e.g., flywheel, pulley, etc.)	90 R	WITH FLUID PASSAGE IN WORKING MEMBER COMMUNICATING WITH WORKING FLUID
61	WITH MEASURING, TESTING, SIGNALLING OR INSPECTION MEANS	91	.Both inlet and outlet to working fluid
62	REMOVABLE AUXILIARY ATTACHMENT TO WORK SURFACE	92	.Discharge solely at periphery normal to rotation axis
63	AMBULANT, BODY SUPPORTED OR WITH CARRYING HANDLE	90 A	.Air and watercraft propellers
64	TRANSLATORY REACTION MOTION	93 R	AMBIENT FLUID OR EXHAUST GAS DIRECTED THROUGH HUB, FAIRING OR HOUSING
65	.And concurrent rotary reaction motion	94	.Aircraft spinner or cowling
66	.Flexible or relatively movable working member or part	93 A	.Water or marine propellers
67	..Valve type	95	WITH HEATING, COOLING OR THERMAL INSULATION MEANS
68	..Complemental pivoted surfaces		
69	OPERATOR SUPPORTED MANUALLY ACTUATED TYPE	96 R	.Changing state mass within or fluid flow through working member or carrier
70 R	.Operation solely by direct hand manipulation	97 R	..Flow exhausted to working fluid
71	..Simulation or having indicia, ornamentation or combined feature	97 A	...Laminated or porous skin
		96 A	..Blade inserts
72	..Relatively movable portions	98	SUSTAINED ANCILLARY MOVEMENT OF ROTARY WORKING MEMBER (E.G., CYCLIC FEATHERING, ETC.)
73	...Arcuate planar folding of working surface		
70 A	..Fans	99	.Intermounted rotary members
74	.Fulcrum support type (e.g., oar, scull, etc.)	100	.Continuous rotor oscillation
75	.Reciprocatory pin-slot actuator	101	.Cyclic radial movement
76	.Rotary hand crank (e.g., egg beater, etc.)	102	.Responsive to carrier tilt
77	..Intermeshing or interdigitated working members	103	.Lead-lag type rotor blade movement
78	CRANK TYPE DIPPING OR STIRRING MOTION	104	..And additional correlated blade movement (e.g., pitch change, etc.)
79	OSCILLATORY REACTION MOTION	105	..Positive means effecting lead-lag movement
80	.With pendulum, counterbalance or inertial weight	106	..With movement restraining means (i.e., damping)
81	.Flexible working member	107	...Resilient bias or limit stop
82	.Relatively movable working member portions	108	.By actuator eccentric to rotation axis
83	.Compound motion (e.g., feathering, undulating, etc.)	109	..Stationary eccentric guide or track
		110	.Continuous rotation about plural axes

111	..Motion about parallel axes	145	.Self-shifting or selectively adjustable mass
112	..Responsive to fixed actuator (e.g., cam or trip, etc.)	146 R	COMBINED OR CONVERTIBLE
113	..Axial cam	146 A	.Hub lubrication or seal
114	...Selectively adjustable	147	HAVING POSITIVE MEANS FOR IMPELLER ADJUSTMENT
115	...Plural impellers		
116	..Stationary cam track or guide surface	148	.Tiltable carrier (e.g., hub, etc.)
117	..Responsive to gravity or working fluid force	149	.Shiftable carrier support
118	..Having manual control or adjustment	150	..Rectilinear motion
119	..Motion about parallel axes	151	.Power derived from impeller shaft
120	PLURAL IMPELLERS HAVING RELATIVE MOVEMENT OR INDEPENDENT SUPPORTS	152	..By brake application or release
121	..Shiftable support	153	.Having pitch lock or adjustable stop
122	..Intersecting or interdigitated paths of operation	154	..Fluid motor for impeller adjustment
123	..Divergent rotation axes	155	.Motor bodily rotatable with impeller hub or shaft
124	..Coaxial rotation	156	..Fluid motor
125	..Individual prime mover	157 R	...Coaxial with impeller shaft
126	..Concentric working members	157 A	...Rotary fluid motor
127	..Concurrent adjustment	157 B	...Plural blade units
128	..Oppositely rotating impellers	158	...Working member mounted or housed
129	...Engine driven	159	.Power or manual actuator on non-rotatable part
130	..Differential or independent adjustment	160	..Planetary gearing connecting rotatable and non-rotatable parts
131	ARTICULATED, RESILIENTLY MOUNTED OR SELF-SHIFTING IMPELLER OR WORKING MEMBER	161	..Axially movable impeller
132 R	..Sectional, staged or nonrigid working member	162	..Having motor
132 A	..Flexible sheet or plate	163	..Adjustment rod through entire impeller shaft
132 B	..Windmills	164	..Reciprocating sleeve or collar on or rod in impeller shaft
133	..Axially displaceable rotary carrier (e.g., hub, etc.)	165	...Reciprocated by coaxial screw
134 R	..Nonmetallic resilient mounting	166	...Rack-pinion connection to working member
134 A	..Aircraft rotors	167	...Pin-slot or cam-slot connection to working member
135	..Resilient bias or mount	168 R	...Link connection to working member
136	..Rotary working member pivotable solely about radial axis	168 A	...Turbo-machine
137	...Convolute spring coaxial with impeller shaft	169 R	HAVING CLUTCH OR BRAKE MEANS
138	..With manual control means	169 A	.Engine cooling fans
139	..Including weight bias means	170 R	SPECIFIC DRIVE OR TRANSMISSION MEANS
140	..Including movement limit stop or damping means	171	.Impeller driven by fluid motor
141	..Plural articulation	172	.Alternating rotation
142	WORKING MEMBER FOLDABLE, PIVOTABLE OR COLLAPSIBLE TO NON-USE POSITION	173	.Manual powered means
143	..Member movement in rotation plane	170 HM	.Hand mixers
144	WITH WEIGHT-BALANCING MEANS		

174	HAVING LUBRICATING, SEALING, PACKING OR SPECIFIC BEARING MEANS BETWEEN IMPELLER OR SHAFT AND STATIC PART	197 R	CUPPED REACTION SURFACE NORMAL TO ROTATION PLANE
175	DIVERSE IMPELLERS OR WORKING MEMBERS	197 A	.Air and water motors (natural fluid current)
176	SPIRAL BLADE OR FLOW PASSAGE (360 DEGREE)	197 B	.Pelton wheels (impulse wheels)
177	.Flow confining casing, shroud or passage	197 C	.Torque converters
178	PERIMETRIC BLADING EXTENDING AXIALLY BETWEEN ANNULAR MEMBERS (E.G., SQUIRREL CAGE TYPE, ETC.)	198 R	MULTIPLE AXIALLY SPACED WORKING MEMBERS
179	ROTOR FLOW CONFINING OR DEFLECTING WEB, SHROUD OR CONTINUOUS PASSAGE	199	.Opposed axial flow
180	.Blades projecting axially from concavo-convex annular web	200 R	.Circumferentially offset
181	.Apertured or foraminous web or shroud	200 A	..Turbo machine
182	.Radially extending web or end plate	201 R	.Differing radii
183	..Circumferentially or radially angulated or discontinuous blades or sections (e.g., stepped, etc.)	201 A	..Non-turbo machine
184	..Spaced intermediate ends of opposed axial flow impeller	198 A	.Turbo machine
185	..Circumferentially and radially continuous web or end plate	202	PROJECTING BLADE AXIS OFFSET FROM ROTATION AXIS
186 R	..Having opposed annular surface between adjacent blades	203	UNSYMMETRICAL IMPELLER OR DISSIMILAR WORKING MEMBERS
187	...Angularly spaced, axially elongated blades (i.e., squirrel cage type)	204 R	SPECIFIC WORKING MEMBER MOUNT
186 AAdjustable blade or part	205	.Adjustable
188	...Conical web	206	..Spring biased detent
189	.Axially extending shroud ring or casing	207	..Blade releasably clamped
190	..Vibration inhibiting or expansion-contraction structure	208	...Split impeller hub
191	..Segmental shroud	209	..Thimble or sleeve fixed on impeller blade
192	..Having radial flange	210 R	.Distally supported on radial arm
193 R	..Spaced inwardly of impeller periphery	211	..Axially extending blade
193 A	..Root platforms	210 A	..Turbo machine
194	LASHING BETWEEN WORKING MEMBERS OR EXTERNAL BRACING	212 R	.Interlocking blades
195	.Peripheral	212 A	..Turbo machine
196 R	.Connecting adjacent work surfaces	213 R	.Welded, cemented or fused
196 A	..Non-turbo machine (windmills)	213 A	..Non-turbo machine
		214 R	.Blade held between separable surfaces
		214 A	..Turbo machine
		215	.Blade received by continuous circumferential channel
		216	..Radially spaced ribs or grooves
		217	..Divided blade root
		218	..Having circumferentially extending binder
		219 R	.Blade received in well or slot
		220 R	..Having blade locking means
		221	...Resilient or deformable
		220 A	...Non-turbo machine
		219 A	..Non-turbo machine
		222	.Blade straddles carrier
		204 A	.Turbo machine
		223 R	SPECIFIC BLADE STRUCTURE (E.G., SHAPE, MATERIAL, ETC.)
		224	.Having wear liner, sheathing or insert
		225	.Having spanwise compression means

226 .Formed with main spar
 227 R .Openwork (e.g., lattice, looped,
 etc.)
 227 A ..Propeller and non-mixers
 228 .Tined or irregular periphery
 229 R .Laminated, embedded member or
 encased material
 230 ..Wire, fiber, strand or fabric
 229 A ..Turbo machine
 231 R .Apertured or permeable
 231 A ..Mixers or agitators
 231 B ..Slotted blade
 232 .Hollow
 233 ..Having brace means bridging
 cavity
 234 .Integrally shaped or blended
 into hub
 235 .Irregular, flanged or channel
 forming blade surface
 236 R ..Ribbed or grooved
 236 A ...Concentric or circular ribs
 237 ..Angular or offset
 238 .Cantilever blade
 239 .Blade cuff or shank construction
 240 .Flexible
 241 R .Coating, specific composition or
 characteristic
 241 A ..Plastic or synthetic material
 241 B ..Ceramic material
 242 .Reverse curve surface
 243 .Concave surface
 223 A .Turbo machine
 223 B .Radial flow devices
 244 R **SUPPORT MOUNTING, CARRIER OR
 FAIRING STRUCTURE**
 245 R .Spinner or fairwater cap
 245 A ..Water or marine propellers
 246 .Selectively adjustable impeller
 mount
 244 A .Turbo machine
 244 B .Water or marine propellers
 247 R **PROTECTIVE SCREEN OR GUARD**
 247 A .Water or marine propellers
 248 **MISCELLANEOUS (E.G., BLADE ROOT
 OR ROOT BLOCK, ETC.)**

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