376 **PROCESSES OF MANUFACTURING FIBERS, FILAMENTS, OR PREFORMS**
377 .With measuring, controlling, sensing, programming, timing, indicating, or testing
378 ..Optical property
379 ..Fluid pressure
380 ..Molten material level
381 ..Winder or puller movement
382 ..Diameter or coating thickness
384 ..Temperature
385 .Process of manufacturing optical fibers, waveguides, or preforms thereof
386 ..Planar waveguides
387 ..Forming lens integral with optical fiber
388 ..Nonoxygen halide glass (e.g., metal halide, etc.)
389 ..Nonoxygen chalcogenide glass containing
390 ..Scandium (Sc), yttrium (Y), or rare earth doped core or preform (i.e., atomic numbers 21, 39, 57-72)
391 ..Plasma utilized
392 ..Laser utilized
393 ..Hollow optical fibers or waveguides
394 ..Ion implantation
395 ..Sol-gel or liquid phase route utilized
396 ...Sonic or ultrasonic energy utilized (e.g., homogenizing, dispersing, etc.)
397 ..Fluorine doping
398 ...Germanium or boron containing
399 ..Incorporating dopant into porous body
400 ..Ion exchange utilized
401 ..Extruding
402 ..Producing bent, crimped, twisted, textured, or curled optical fibers or waveguides
403 ..Producing noncircular optical fibers or waveguides (e.g., particular cross section, etc.)
404 ..With step of casting or forming nonfiber workpiece (e.g., molding liquid preform, shaping molten glass against a forming surface, etc.)
405 ..Utilizing multiple crucibles or multiple feed streams of molten glass
406 ..Joining or bonding optical fibers, waveguides, or preforms (e.g., coupling, etc.)
407 ...End to end (i.e., butt end joining)
408 ...Side to side
409 ....Having plural adjacent fibers or rods sheathed (i.e., bundle) in tube or enclosure
410 ....By fusing preformed fibers without attenuating stock material
411 ....With stretching or drawing
412 ...Rod placed inside of tube
413 ..With step of vapor deposition
414 ...Forming optical fiber or fiber preform by soot buildup (i.e., vapor axial deposition, VAD)
415 ....Forming glass layers with graded or radially varying refractive index
416 ....Consolidation in situ (e.g., sintering, etc.)
417 ...Inside of tube or hollow form by soot buildup
418 ....Elongated material feed means within tube (e.g., reactant feed means place inside of tube, etc.)
419 ....With step of collapsing tube
420 ....Maintaining isotropic conditions inside of tube
421 ...Outside of tube or rod by soot buildup
422 ....With dehydration (e.g., OH removal, etc.)
423 ...Inorganic carbon, metal oxide, or inorganic nitrogen containing material deposited (e.g., elemental carbon, carbides, nitrides, etc.)
424 ..Inert, nonoxidizing, or reducing environment
425 ..Electromagnetic, magnetic, wave, or particulate energy utilized
426 ..Drying, dehydration, OH removal or prevention
427 ..Consolidating preform (e.g., sintering, etc.)

428 ...Collapsing tube
429 ..With etching or leaching
430 ..With significant coating step
431 ...Free metal or metal alloy containing coating
432 ...Synthetic or natural resin containing coating
433 ..With cutting or severing
434 ..With quench cooling (e.g., forced air or cryogenic immersion, etc.)
435 ..With fiber stretching, drawing, or pulling (e.g., from rod, etc.)
436 .Plasma utilized
437 .Producing noncircular fibers (e.g., particular cross section, flat, elliptical, etc.)
438 .Producing crimped, twisted, or curled fibers (e.g., textured, etc.)
439 .Producing hollow fibers or tubular preforms
440 .Sol-gel route or ion exchange utilized
441 .Electromagnetic, magnetic, wave, or particulate energy utilized
442 .Composite fiber matrix (e.g., carbon or metal fiber with glass matrix or vice versa, etc.)
443 .With coating (e.g., lubricant, sizing, etc.)
444 ..Glass (i.e., nonoptical fiber, metal oxide)
445 ..Free metal or alloy containing
446 ...Vapor deposition of free metal or free metal containing material
447 ..Synthetic resin, natural resin, or asphalt coating
448 ...Organic silicon containing (e.g., coupling agent, etc.)
449 ...Asphalt
450 ...Thermosetting or themoplastic resin
451 ....Nitrogen or phenol containing
452 ..With severing
453 ..With advancing, gathering, or winding continuous fiber or filament
454 .Formation of fiber or preform utilizing fluid blast (e.g., from molten glass, etc.)
455 ..During slinging or rotary-centrifugal fiber distribution
456 ...Depositing molten glass on periphery of rotating fiberizing means (e.g., disc, rotor, wheel, etc.)
457 ...Specified composition of slinger or rotary-centrifugal fiber distributor
458 ...Fluid blast guide, baffle, or deflector
459 ...Centrifuge with fiberizing holes
460 ....Adjacent combustion chamber, burner, or blower utilized
461 .....Having at least two concentric burners or blowers
462 ..Solid fibers comminuted by fluid blast
463 ..Specified nozzle opening or configuration (e.g., opening size, cross section, etc.)
464 ..Fluid discharge skirt or shield utilized
465 ..Attenuation by fluid blast contacting glass
466 ...Plural fluid blasts or jets contacting single glass stream
467 ....Fluid blast penetrated transversely by jet (e.g., toration, etc.)
468 ..Flame or combustible fluid blast utilized
469 .By slinging or rotary-centrifugal fiber distribution (i.e., without fluid blast)
470 ..Centrifuge with fiberizing holes
471 .With bushing flood prevention, removal, or breakout prevention
472 .With chemical etching or leaching
473 .With removal of coating (e.g., desizing, oxidizing coating, etc.)
474 .With purifying or homogenizing molten glass (e.g., removing bubbles, etc.)
475 .With fiber drawing or pulling (e.g., attenuating, etc.)

476 ..By modifying fluid pressure (e.g., vacuum, reduced or superatmospheric pressure, etc.)
477 ..Drawing fiber from rod
478 ..Fluid assisted attenuation or directing of fiber or filament
479 ..Reeling or winding
480 ..Cutting or severing
481 ..Cooling of molten glass at forming area (e.g., cooling fins, etc.)
482 .With charging or pretreatment of batch material (e.g., gas heating, crushing, etc.)
483 **FIBER MAKING APPARATUS**
484 .With measuring, controlling, sensing, timing, inspecting, indicating, or testing means
485 ..By optical means or of optical property
486 ..Winder or puller movement (e.g., drawing sensor, etc.)
487 ..Having fiber breakout detection, compensation, or prevention means
488 ..Temperature
489 ..Fluid pressure
490 ..Molten glass level (e.g., sensor, check valve, etc.)
491 ..Diameter or coating thickness
492 .With designated composition of dies, bushings, or nozzles
493 ..Platinum group metal containing (i.e., ruthenium (Ru), rhodium (Rh), osmium (Os), iridium (Ir), palladium (Pd), platinum (Pt))
494 .With means to form hollow fiber or preform
495 .With specified bushing, tip, or feeder structure
496 ..Tipless
497 ..Noncircular tip opening (e.g., elliptical, polygonal, etc.)
498 ..With cooling means for bushing (e.g., orifice plate cooling, etc.)
499 ..With heating means for bushing
500 .With means to align preform with drawing apparatus or form multifilament fibers (e.g., gathering shoe, etc.)
501 .With fiber splicing or coupling means (e.g., fusion splicing, end to end, side to side, etc.)
502 .With multiple crucible or multichamber system
503 .With cleaning means
504 .With crimping or curling means
505 .With means to distribute fibers across collecting surface (e.g., blower, mechanical distribution means, reciprocating, oscillating, etc.)
506 .With assorting means
507 .With means for heating newly formed filament, fiber, or preform
508 ..Having means to shape or modify
509 ..Electric or electromagnetic heating utilized (e.g., induction heat, etc.)
510 .With means for cooling newly formed fiber, filament, or preform (e.g., nascent fiber, etc.)
511 ..With cooling surfaces or fins
512 ...Fluid cooling agent circulated
513 ..Gas column (e.g., generally upward gas stream, etc.)
514 ..Liquid stream or spray
515 .Specified composition of slinger or rotary-centrifugal fiber forming means
516 .Rotary-centrifugal fiber forming means (e.g., slinger, rotary disc, no fiberizing holes, etc.)
517 ..Having fluid blast means for contacting glass
518 ...With fluid blast guide, baffle, or deflector
519 ..Having means to pass cooling fluid through apparatus
520 ..Depositing glass on periphery of rotating fiber forming means (e.g., disc, rotor, wheel, etc.)
521 .Centrifuge with fiberizing holes (e.g., rotor, etc.)
522 ..Having adjacent combustion chamber, burner, or blower utilized
523 ...With at least two concentric blowers or burners

524 .With fluid blast means
525 ..Having specified nozzle opening size or nozzle cross section
526 ..Having fluid discharge skirt or deflector
527 ...Toration means utilized
528 ..Combustion or flame attenuation
529 .Having coating or treating means
530 ..Having gas feeding or withdrawal means
531 ...Having soot forming flame hydrolysis burner (e.g., flame oxidation, etc.)
532 ...With means for recovery, recirculation, or elimination of excess gas feed or coating material
533 .With drawing means
534 ..Movable furnace or bushing (e.g., rotatable, reciprocating, etc.)
535 ..Pulling wheels or rolls
536 ...With severing
537 ..From rod stock
538 ..With fluid assisting means
539 .With winding means
540 .With furnace charging means
17.1 **PROCESSES**
17.2 .Sol-gel or liquid phase route utilized
17.3 .With shaping of particulate material and subsequent fusing of particles
17.4 ..Including flame or gas contact
17.5 ..Employing nonoxide additive
17.6 ..With treatment subsequent to fusing
19 .Slag, utilization
20 ..Foaming of slag
21.1 .Self-supporting particle making (e.g., bead, ball, granule, etc.)
21.2 ..By molten glass comminuting
21.3 ..Spheroidizing or rounding of solid glass particles
21.4 ..Hollow or porous particle
21.5 ..With mechanical shaping or subdividing
22 .With pore forming in situ
23 .With destruction or delamination of transitory attached or associated separate material
24 .Utilizing parting or lubricating layer
25.1 ..Providing a gaseous layer between glass and apparatus
25.2 ...Sheet
25.3 ....Formed from molten glass
25.4 ....Reshaping
26 ..Coating of apparatus
27 .Repairing or cleaning of apparatus; or batch dust prevention or control
28 .With glass reclaiming, repairing or crack run interruption
29.1 .With program, time, or cyclic control
29.11 ..Electric computer or data processing system utilized
29.12 .With measuring, sensing, inspecting, indicating, or testing
29.13 ..Combustion chamber atmosphere
29.14 ..Diameter, width, or thickness of formed article
29.15 ..Fluid pressure
29.16 ..Batch or feed material
29.17 ..Level or flow of molten material
29.18 ..Magnetic, electromagnetic, or wave energy utilized (e.g., light, infrared, ultrasonic, etc.)
29.19 ..Temperature
29.21 ...Of molten glass
30.1 .With chemically reactive treatment of glass preform
30.11 ..To enhance the ability to darken or change color in response to radiation exposure (e.g., photochromic)
30.12 ..To hydrate the glass
30.13 ..With metal ion penetrating into glass (i.e., ion exchange)
30.14 ...To temper or strengthen the glass
31 ..By etching or leaching
32.1 .Operating under inert or reducing conditions
32.2 ..With bonding or sealing
32.3 ..With crystallization or photochromism or phase separation
32.4 ..With coating
32.5 ..With forming glass from molten state, with treatment of molten glass, or with drawing of glass in softened state

33.1 .Devitrifying glass or vitrifying crystalline glass (e.g., starting with or forming crystalline glass, etc.)
33.2 ..Electromagnetic radiation or resulting heat utilized (e.g., gamma rays, X-rays, atomic particles UV, visible, IR, actinic, laser, microwave or radio wave, etc.)
33.3 ..Halogen containing phase (e.g., crystalline or noncrystalline, etc.)
33.4 ..With coating
33.5 ..With fusion bonding glass to a formed part (e.g., devitrified seals, glass to metal, etc.)
33.6 ...Glass applied in powdered form (i.e., frit)
33.7 ..Alumino-silicate containing phase
33.8 ...Containing at least 3 percent lithium or lithium oxide (e.g., spodumene, eucryptite, petalite, etc.)
33.9 ..Forming product or preform from molten glass
34 .With sealing off of gas evacuating opening
35 .With vibrating, oscillating or agitating a preform
36 .Fusion bonding of glass to a formed part
37 ..Lens making
38 ...With bonding of at least three formed parts
39 ...With molding or reshaping of glass to assume shape of configured lens part during bonding
40 ..Dielectric or joule effect heating of work
41 ..With annealing or tempering of glass
42 ..Bonding of subassembly with subsequent assembly and bonding (formed parts only)
43 ..By or with coating at joint interface of a formed part prior to bonding
44 ..With embossing or corrugating
45 ..With glass part forming from shapeless molten glass
46 ...With blowing to shape glass
47 ...In mold cavity
48 ....And bonding to part in same mold cavity
49 .....Bonding to metal formed part
50 ...Forming and bonding glass sheet to metal part
51 ....Contacting metal with molten glass prior to forming sheet
52 .....Forming of plural glass sheets
53 ...Forming plural sheets or sheet-like streams from same source
54 ..With reshaping glass preform prior to assembly or subsequent to bonding
55 ...Prior to assembly
56 ..With severing, perforating, or breaking of glass
57 ..Relative rotation of work and heating means
58 ..Of parts having opposed facing areas out of contact (e.g., building blocks)
59.1 ..Of glass to metal part
59.2 ...Maintaining cavity in glass
59.21 ....Glass applied in powdered (i.e., frit) form
59.22 ....Named fusible bonding material employed
59.23 ....With firing in vacuum, in inert atmosphere, or in pumped in gas
59.24 ....Metal part outside of glass part
59.25 ....Metal part inserted through hole or into groove in glass part
59.26 ....Metal part forced through or into softened glass part (e.g., pinch sealing, etc.)
59.27 ....Metal part coaxial with and inside of glass part
59.28 ....Relative movement or manipulation of parts during or immediately preceding fusion
59.3 ...More than two parts in overlaying series (noncavity)
59.31 ....Metal part inserted through hole or into groove in glass part
59.32 ....Metal part forced through or into softened glass part (e.g., pinch sealing, etc.)

59.33 ....Relative movement or manipulation of parts during or immediately preceding fusion
59.34 ....Metal part outside of glass part
59.35 ....Metal part coaxial with and inside of glass part
59.4 ...Metal part outside of glass part
59.5 ...Glass applied in powdered (i.e., frit) form
59.6 ...Metal part coaxial with and inside of glass part
59.7 ...Metal part forced through or into softened glass part (e.g., pinch sealing, etc.)
60.1 .With coating
60.2 ..Plural diverse layers
60.3 ..Organic coating
60.4 ..Free metal coating
60.5 ..Oxide coating
60.51 ...From inorganic metal salt
60.52 ...From organic metal compound
60.53 ...From inorganic oxides or hydroxides
60.6 ..Free carbon containing coating
60.7 ..Inorganic metal salt containing coating
60.8 ..Silicon containing coating
61 .With wearing away of surface material (e.g., abrading or grinding)
62 .Combined
63 .Sequentially forming, reheating, and working
64 ..Reshaping
65 .Forming and fire polishing or product
66 .Forming product or preform from molten glass
67 ..Converting sheet to hollow product or hollow product to sheet
68 ..Initial forming of hollow product or preform in mold cavity
69 ...With annealing or tempering
70 ...With severing of formed product
71 ...Spreading of molten glass by rotation
72 ...With charging of mold cavity
73 ....By suction from upper surface of "pool"
74 .....With sequential blowing in charged cavity
75 ....Through orifice in bottom wall of dispenser
76 ....With additional diverse shaping step
77 ...With additional forming step
78 ....Diverse
79 .....Press and blow
80 ......In separate lines
81 ...By differential gas pressure
82 ..Reshaping of hot parison in mold cavity to form hollow article
83 ..With positive cooling of product or molten glass at forming area
84 ...By direct gaseous contact
85 ...Of glass product
86 ..Drawing and simultaneously forming hollow stock from molten glass
87 ...With additional shaping, or severing, or perforating
88 ...Vertically drawing upwardly while applying fluid internally of stock
89 ..Forming hollow stock by surface filming
90 ..Sheet
91 ...With application of lateral tension to edge portion of moving sheet
92 ...With smoothing subsequent to sheet formation
93 ...With reshaping or surface deformation
94 ....Subsequent to formation
95 ...With annealing or tempering
96 ....Conveying at different rate than speed of formation
97 ...With severing or perforating
98 ...Simultaneously forming plural separate sheets
99.1 ...By or with pouring molten glass onto forming surface
99.2 ....Utilizing molten metal forming surface
99.3 .....Maintaining molten metal temperature
99.4 .....Treating or removing impurities in molten metal or glass
99.5 .....Maintaining or adjusting sheet width or thickness

99.6 .....By nonmechanical means
100 ....Onto moving roll or platen
101 .....Through bite of rolls
102 .Reshaping or surface deformation of glass preform
103 ..Utilizing heat shield or heat-sink
104 ..With annealing, tempering, or fire-polishing
105 ..With severing or perforating
106 ..Reshaping of planar sheet
107 ...By sagging by gravity on mold surface
108 ..Reshaping of tubular preform, retaining cavity
109 ...During rotation
110 ...Utilizing vacuum or gas pressure
111 .Glass preform treating
112 ..With severing or preforating
113 ...By or with flame
114 ..Tempering
115 ...Differential or localized
116 ...Quenching in liquid bath
117 ..Annealing
118 ...During conveying
119 ....Annealing by direct contact with gaseous heat exchange medium
120 ..By flame
121 .Blending of separate molten glass streams
122 .Charging of molten glass into mold cavity
123 ..By gravity and severing subsequent to charging mold cavity
124 ..By suction
125 .Gathering from upper surface of glass pool
126 .Discharging molten glass downwardly through orifice
127 ..With gob shaping or treating subsequent to discharge through orifice
128 ..With temperature modification at orifice
129 ..Regulating or arresting of flow into or out of orifice
130 ...With or by differential gas pressure
131 ....With segregation prior to discharge
132 ...With segregation prior to discharge
133 .Severing of molten glass stream
134.1 .Fining or homogenizing molten glass
134.2 ..Subatmospheric pressure or vacuum utilized
134.3 ..Melt accelerator or color modifier utilized (e.g., fining agent, etc.)
134.4 ..Oxygen enriched or nitrogen reduced gas utilized (i.e., modified air)
134.5 ..By injecting gas below surface of molten glass
134.6 ..Exhaust or top gas treated or recycled
134.7 ..Rotating furnace or chamber utilized (e.g., crucible, etc.)
134.8 ..By melting toxic or waste material
134.9 ..By eliminating gaseous inclusions (e.g., bubbles, etc.)
135.1 ..Glass conditioning channel section utilized
135.2 ..By agitating
135.3 ...Mechanical stirrers utilized
135.4 ....Spiral
135.6 ..Electric furnace utilized (e.g., induction or radiant heat from electric source, etc.)
135.7 ...With submerged electrodes
135.8 ....Melting in separate zone of glass furnace
135.9 ..By charging batch material
136.1 ...Preheating batch material
136.2 ...Directing batch feed to float on molten glass surface
136.3 ...Burner directed towards batch or melt
136.4 ..By cooling molten glass
137 .Cooling of molten glass
138 **ELECTRONIC ENVELOPE HEADER, TERMINAL, OR STEM MAKING MEANS**
139 .With means inserting wire into glass
140 .By press mold
141 **MELT DISINTEGRATOR AND SOLIDIFIER INCLUDING FLUID-MELT CONTACT MEANS**
142 **PARTICULATE BEAD OR BALL MAKING APPARATUS (E.G., PIN HEADING)**
143 .By rolling means

144 **MEANS SHAPING PREFORM FROM GRANULAR MATERIAL WITH FUSION MEANS**
145 **PLURAL SOURCES FEEDING DIVERSE GLASS MELTS TO COMMON FORMING MEANS**
146 **WITH MEANS TO FEED DIVERSE MATERIAL TO GLASS WORKING MEANS**
147 .Wire laminating means
148 ..Sheet rolling means
149 ...Sandwiching wire between opposed glass feeds
150 ...Roll coacting with platen
151 ....Embedding means on roll
152 **FUSION BONDING MEANS**
153 .Concentric body making (e.g., vacuum bottle making, etc.)
154 .Glass to metal
155 .Electronic device making
156 .With article molding means
157 **MEANS PROVIDING SPECIAL ATMOSPHERE**
158 **WITH SIGNAL, INDICATOR, INSPECTION MEANS, REGISTER, OR RECORDER**
159 **WITH APPARATUS SAFETY MEANS**
160 **CONTROL RESPONSIVE TO CONDITION SENSING MEANS**
161 .Glass working fluid or treating fluid control
162 .Temperature or heater control
163 .Speed control
164 .Molten glass dispenser or gatherer control
165 **WITH REJECT CATCHER, DEFLECTOR, OR HOLDER**
166 **PERFORATOR FOR ARTICLE OR PREFORM**
167 **CONVERTIBLE TO DIFFERENT OPERATION**
168 **WITH POSITIVE CLEANING MEANS FOR APPARATUS**
169 **WITH MEANS PROVIDING PARTING MATERIAL**
170 **WITH APPARATUS LUBRICATING MEANS**
171 **WITH REPAIR, ASSEMBLY, OR DISASSEMBLY MEANS FOR APPARATUS**
172 .To replace worn or damaged parts
173 .To provide alternately used parts
174 **WITH MECHANICAL CUTTER, SCORER, OR SCRIBER FOR ARTICLE OR PREFORM**
175 .With annealing means
176 .Running length
177 .Associated with article mold
178 **WITH AGITATOR FOR MOLTEN OR SOFT GLASS**
179 .Delivery area associated
180 ..Orifice associated
181 **COMBINED**
182.1 **WITH FLUID SUPPORT FOR ARTICLE OR PREFORM**
182.2 .Gaseous support
182.3 .Means for treating or maintaining molten metal
182.4 .Including preform width maintaining or stretching mean
182.5 .Structure or composition of lining material or arrangement with shell
183 **EXTRUSION DIE FORMER WITH UPSTREAM DISCHARGE ASSISTANT**
184 **MEANS CHARGING CONTINUOUS FILM OR STRIP TO SEPARATE AND DISTINCT FORMER**
185 .Into sheet rolling means
186 ..With auxiliary heating or cooling means upstream of rolling means
187 **MEANS DRAWING TUBE OR ROD STOCK FROM BATH**
188 .Drawing vertically upward
189 ..With product take-down means
190 ..Means correlating air supply and bait movement
191 ..With internal core or centering means
192 ..Air injection means extending through bath
193 **MEANS DRAWING SHEET FROM BATH**
194 .With annealing or tempering means
195 .Means dividing and recombining melt in draw chamber
196 .Vertically upwardly with means bending sheet to horizontal
197 ..With moving endless drawing or flattening table
198 ..With coacting roll contacting surface of supply bath
199 .With width maintaining and/or lateral stretching means
200 ..Stretching means
201 ..Adjustable width maintaining means
202 .With pivoted lip tile
203 .With auxiliary heating means for draw pot or drawing chamber

204 .With cooling means in drawing chamber
205 .With radiant heat reflector in draw pot or drawing chamber
206 .With skimmer
207 **GOB CHARGING MEANS WITH SHAPE IMPARTING RECEPTACLE MEANS**
208 .With glass treating means
209 .By fluid pressure discharge assistant means
210 .By suction gatherer mounted above supply
211 ..With means correlating movable pool-closure
212 ..Gatherer moving transversely from orbit of traveling mold (i.e., ram type)
213 ..Mold is gatherer
214 ...Parison mold
215 ....With plunger movable relative to mold
216 .....With separate, distinct blow mold
217 ......Diverse molds traveling concentric orbits
218 ....Finish mold pivotally mounted below parison's orbit
219 ....With blow means
220 .....Sequentially used, distinct molds
221 .By delivery from tank feeder
222 ..To parallel mold tables
223 ..With press means
224 ...With diverse molding
225 ..With gob guide means
226 .With press means
227 **DIVERSE DISTINCT GLASSWORKING APPARATUS**
228 .Marvering means with blow means
229 .Press means with blow means
230 ..With reheating means therebetween
231 ..Blank mold encaseable in finish mold
232 ..With mold inverting means
233 ...With pneumatic charge compacting means
234 ....Settle-blow means
235 ...Neck mold inverting
236 ....With parison mold inverting
237 ..Diverse molds traveling concentric orbits
238 ...With diverse motion of mold
239 ...With movable work transfer means between orbits
240 ..Plural traveling mold carriers
241 ...With movable intermediate work transfer means
242 ..Reciprocating mold bottom
243 **PLURAL DISTINCT GLASSWORKING APPARATUS**
244 .Spaced preform reheating means with reshaping means
245 .Sheet rolling means
246 .Plural presses
247 ..Plungers sequentially coacting with same mold
248 ..With relative rotation between plunger and mold during withdrawal
249 ...Plungers oppositely disposed
250 ..Plungers oppositely disposed
251 ..Plungers orbiting above orbiting molds
252 .Fire-polishing means
253 **ROLLING MEANS TO FORM SHEET OR STRIP**
254 .With treating means
255 .With corrugating or surface imprinting means
256 .Roll coacting with planar platen
257 ..Reciprocating platen
258 **SHEET CASTING AND RECEIVING MEANS**
259 .With pot handling means
260 **WITH MEANS ABOVE MOLD TO TAKE-OUT OR TRANSFER PRODUCT**
261 **BLOWING MEANS WITH BLOW MOLD**
262 .With treating means
263 .Combined with vacuum means
264 .Traveling mold
265 ..With means heating and/or cooling apparatus
266 .Mold rotary about own axis
267 .With means heating and/or cooling apparatus
268 **PREFORM RESHAPING MEANS WITH TREATING MEANS**
269 **GLASSWORKING OR PREFORM BY OR WITH REHEATING MEANS (E.G., FLAME SEVERING)**
270 .Envelope tipping off type
271 .Heating means movable relative to work during shaping operation
272 .Work, workholder, or tool correlated burner control
273 .Planar sheet preform
274 .With spaced preheating means
275 .Mechanical means to reshape preform

276 ..Tubular type preform
277 ...By resizing mandrel
278 ...Means supporting and orbiting preform
279 ....Preform supported horizontally
280 ....Preform supported vertically
281 ...By bending means
282 ...By internal forming means
283 ...By stretching means
284 .Fire-polishing means
285 .To reshape preform by flame pressure or gravity
286 **PREFORM RESHAPING MEANS**
287 .Sheet bending mold
288 ..With heat shield or heat sink
289 ..Including auxiliary movable sheet support or movable sheet guide means
290 ...Movable mold section
291 ..Having movable section
292 .Cylindrical preform
293 ..By threading means
294 ..By expansible mandrel
295 ..By crimping means
296 ..By internal and external forming means
297 ...Both rotary driven
298 ...Rotary internal, stationary external
299 ..By flaring means
300 **MEANS APPLYING PNEUMATIC PRESSURE INSIDE OF DISCRETE CHARGE (I.E., BLOW MEANS)**
301 .With selective control means
302 **ARTICLE FORMING MEANS UTILIZING MOLD MOTION (E.G., CENTRIFUGAL CASTING)**
303 **GOB SHAPING OR TREATING MEANS DOWNSTREAM OF GOB SEVERING MEANS**
304 **WITH GOB HANDLING MEANS**
305 **PRESS MOLDING MACHINE**
306 .With product treating means
307 .Mold ring or baffle laterally and movably supported
308 .Plunger coacting with successively presented molds
309 ..Relative rotation between plunger and orbiting mold
310 ...Independent dies actuated by common plunger
311 ..Means providing orbiting mold with diverse motion
312 ..Mold orbiting about horizontal axis
313 ..Vertically segmented orbiting mold
314 .Plural motors coaxial with plunger
315 .With core drawing means
316 .With means to rotate plunger during withdrawal
317 .Means reciprocating or oscillating female mold member
318 .With means varying plunger pressure during pressing
319 .With means for heating or cooling apparatus
320 .Selectively operated plural plungers
321 .Plunger penetrating superimposed mold table
322 .With means to adjust plunger stroke
323 **PRODUCT OR PARISON CENTERING MEANS, OR MOLD AND/OR CORE ALIGNING MEANS**
324 **MOLTEN GLASS DISPENSING MEANS (E.G., FEEDER OR LADLE)**
325 .Discharge orifice below melt level
326 ..With auxiliary heating or cooling means
327 ...At orifice
328 ..Plural plunger-type discharge assistants or discharge orifices
329 ..By differential gas pressure
330 ..By reciprocating plunger-type discharge assistant
331 ...With diverse motion
332 ...With severing means
333 .Discharge lip with discharge assistant
334 **WITH MOLTEN GLASS CHARGE CUTTING OR SCRAPING MEANS**
335 **GLASS FURNACE WITH FURNACE CHARGING MEANS**
336 **GATHERING OR DRAWING POOL TYPE FURNACE**
337 .Supplemental heating or heat exchange means associated with pool
338 ..With deputer, draw ring, or draw shield
339 .Separate and distinct means defining pool (e.g., floor-supported dam)

340 ..Movably mounted
341 ..Cascadingly connected
342 ..By bridge
343 ...Floating bridge
344 ..With deputer, draw ring, or draw shield
345 ..By suspended baffle
346 **GLASS CONDITIONING CHANNEL SECTION**
347 **MELTING POT OR FURNACE WITH STRUCTURALLY DEFINED DELIVERY OR FINING ZONE**
348 **PRODUCT COOLING MEANS (E.G., TEMPERING)**
349 .With preceding reheater
350 ..Plural spaced reheaters
351 ..Plural spaced cooling means
352 **DRAWING BAIT**
353 .With air supply means
354 ..With heating or cooling means
355 **MEANS HEATING OR COOLING APPARATUS**
356 .Internally positioned
357 **MOLD WITH SEPARATING MEANS OR CLAMPING MEANS**
358 .Core drawing means
359 .With mold support or carrier
360 ..Pivoted mold sections
361 **MOLD WITH SUPPORTING OR CARRYING MEANS**
362 **PLUNGER**
370.1 **ROLLER MEANS FOR GLASSWORKING, TEMPERING, OR ANNEALING**
374.1 **APPARATUS MADE OF SPECIAL MATERIAL**
374.11 .Metal-nonmetal composite
374.12 .Metallic
374.13 .Ceramic material
374.14 .Asbestos containing
374.15 .Elemental carbon containing (e.g., graphite, charcoal, etc.)
375 **MISCELLANEOUS**

CROSS-REFERENCE ART COLLECTIONS

900 **DRYING, DEHYDRATION, MINIMIZING OH GROUPS**
901 **LIQUID PHASE REACTION PROCESS**

FOREIGN ART COLLECTIONS

FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**

DIGESTS

DIG 1 **LENS ENVELOPE**
DIG 3 **CRACKED GLASS**
DIG 4 **ELECTRIC HEAT**
DIG 5 **FOIL GLASS**
DIG 6 **GLASS ELECTRODE**
DIG 8 **QUARTZ**
DIG 9 **TUBE**
DIG 10 **STEMWARE**
DIG 11 **ENCAPSULATING**
DIG 12 **REED SWITCH**
DIG 13 **COMPUTER CONTROL**
DIG 15 **NONOXYGEN CONTAINING CHALOGENIDES**
DIG 16 .Optical filament or fiber treatment with fluorine or incorporating fluorine in final product