1 METHODS

Class 216 is an integral part of this Class (Class 156), as shown by the position of this box, and follows the schedule hierarchy of this Class, retaining all pertinent definitions and Class lines of this class.

39 .Plaster board making
40 ..With bending or folding of facing sheet
41 ..With water-proofing with added material
42 ..With embedding of reinforcing material during or subsequent to core formation
43 ..Pore forming in situ
44 ..With preliminary treatment of facing sheet
45 ..With subsequent treatment of plaster board
46 ...Perforating
47 .Making electrical conductors of indefinite length
48 ..With filling of void or cavity with fluent material
49 ..Splicing
50 ..With mechanical working of conductor
51 ..Covering of conductor
52 ...With preformed material
53 ....Wrapping of sheet material (e.g., tape) about conductor and/or conductor assembly
54 ......By longitudinally bending sheet
55 ..Plural spaced conductors
56 ..Plural covering operations
57 .Maintaining the natural appearance of plants or animal parts
58 .Contour or profile photography to reproduce three-dimensional objects
59 .Relief or intaglio representations of three-dimensional objects (e.g., relief modeling of photographs)
60 .Surface bonding and/or assembly therefor
61 ..Simulated products of nature
62 ..With manual drawing or engraving
62.2 ..With formation of lamina by bulk deposition of discrete particles to form self-supporting article
62.4 ...Liberation or formation of fibers
62.6 ...By joining portions of batt to itself
62.8 ...To similarly formed batt
63 ..Manually arranging different colored or shaped discrete elements to form design
64 ..With measuring, testing, or inspecting
65 ..Of multiple spaced elements between and transverse of parallel webs (e.g., Venetian blind ladders)
66 ..Adhesive application of fasteners to articles (e.g., slide fastener to garment)
67 ..Utilizing phosphorescent or fluorescent material
68 ..With fur removal from animal pelt
69 ..Application of end closures to containers
70 ..Encasing movable or loosely confined element between adhering lamina (e.g., drawstrings)
71 ..Of lamina to building or installed structure
72 ..Setting or embedding tufts or discrete pile elements onto backing (e.g., rugs, brushes, etc.)
73.1 ..With sonic or ultrasonic treatment
73.2 ...Rod, strand, or filament
73.3 ...With sonic or ultrasonic cutting
73.4 ...Sheet or web splicing
73.5 ...Friction treatment (e.g., welding)
73.6 ...Vibratory treatment
74 ..With application of centrifugal force
75 ..With balancing of product
76 ..With parchmentizing or transparentizing
..With pore forming in situ to form cellular lamina
91...With separate permanent mechanical joining means (riveted, sewed, stapled, etc.)
78...Foaming
92...With penetrating of fastener
79...Subsequent to assembly of laminae
93.....Sewing
80...With refrigeration or freezing
94...Reclaiming, renewing or repairing articles for reuse
81...With melting or gasification of permanently associated solid material in situ in airtight cavity
95...Toroidal shapes (e.g., tire or tube)
82...With flame contact of lamina
96...Adhesively secured tire retreads
83...With swelling of material of lamina
97...Puncture repairing
84...With shrinking of material of lamina
98...With removal of defective area to be repaired
85...Subsequent to assembly of laminae
99...Optically transparent glass sandwich making (e.g., window or filter)
86...Of lamina covering cylindrical or spherical body
100...Variegated colored lamina or interlayer
87...Providing escapeways for gases trapped or generated between layers
101...With cutting or breaking or partial removal of interlayer and/or lamina
88...Fray-prevention by bonding
102...With deformation or shaping of interlayer and/or lamina
89.11...With vitrification or firing ceramic material
103...With application of plural sequential pressures
89.12...Forming electrical article or component thereof
104...With air evacuation between laminae
89.13...Elemental carbon containing (e.g., graphite, etc.)
105...Directly applied fluid pressure
89.14...Inorganic titanate compound containing
106...With preformed intermediate adhesive layer
89.15...Nitride compound containing
107...Sandwich edge sealing
89.16...Elemental metal or alloy containing
108...Mounting transparent lamina over window opening (e.g., slide-mounting)
89.17...Silver containing
109...Multipane glazing unit making (e.g., air-spaced panes)
89.18...Copper containing
110.1...Making flexible or resilient toroidal shape; e.g., tire, inner tube, etc.
89.19...Tungsten containing
111...Moving work progressively to separate assembly stations
89.21...Molybdenum containing
112...Solid tire type (i.e., nonpneumatic)
89.22...Honeycomb-like
113...Having cushioning void or cavity
89.23...With wax or wax-like processing aid
114...Incorporation of solid nonrubber material at exposed tread surface of tire (e.g., anti-skid)
89.24...Coloring agent containing
115...Applying flowable puncture sealing material
89.25...Elemental carbon containing (e.g., graphite, etc.)
...Applying differently colored material at sidewall (e.g., white wall)
...Building tires directly from strands or cords
...Tubular (airtight) torus (e.g., auto tube-making)
...Multichamber safety tube
...Valve-applying
...Applying reinforcing material to external tube surface
...Joining tube ends to form torus
...Of plural layers
...At least one layer including metal cords
...With injection molding of outer lamina
...Axially assembling preformed flexible endless bands
...With tread-preforming
...Applying tread material to fully-formed carcass
...With specified treatment of tread material before application to carcass
...Shaping
...By winding or including application of inextensible lamina under tread bond
...With specified procedure for interlocking of lamina or removal of air from therebetween; e.g., "stitching", etc.
...With specified procedure for cooling or heating; e.g., for vulcanization, etc.
...With specified procedure for bead, carcass or sidewall formation
...Bead-applying
...Folding fabric about bead
...Applying fabric to form (e.g., carcass building)
...Fabric splice end treatment
...Bead portion of carcass treatment
...Tire bead ring making
...Flexible endless drive belt making
...Forming grooves on inner surface
..."V" or trapezoid section belt
...With plastic shaping or molding
...Wrapping of belt prior to shaping
...With cutting to "V" or trapezoid section
...Helical wire or plural ring reinforced flexible tube making
...Assembling preformed helical coil or rings with separate tube
...With encapsulating of permanently fluent material in hollow or porous lamina or filling of space between adhered laminae
...Prior to bonding of laminae (e.g., golf balls)
...With inflation of airtight cavity
...With weaving, knitting, braiding, twisting or needling
...About tubular lamina
...With electro-deposition
...On adherent surface of lamina prior to assembly
...With temporary disassembling and subsequent bonding of same laminae
...With abrading or grinding of lamina
...Subsequent to assembly
...With destruction of solid transitory material; e.g., dissolving, melting, etc.
...With fluid pressure to prevent collapse of hollow structure during assembly and/or joining
...Joining indefinite length laminae end-to-end
...Of wire, rod, tube or filament
...With cutting of joining ends
...Bonding in stressed condition of at least one prestressed element
...Of stressed filaments
...During winding of lamina
...Bonding of sheets or webs only
...Running length web
...Stressing spherical or tubular body
...Bonding of flexible filamentary material while in indefinite length or running length
...With formation of filaments
...With removal of filamentary material subsequent to lamination thereof
...With winding of filamentary material
....About spherical lamina
....With winding of separate sheet or web
....Winding about and uniting to core
....Winding about subsequently removed core or mandrel
....With cutting of filamentary material to form web or sheet
....Of filamentary material only
....To web of indefinite length
....With axis of filamentary material nonparallel to axis of web
....Plural filaments
....Between plural webs
....Of filamentary material only to form article
....Article is sheet or web
....Of at least two bonded subassemblies
....With creping, wrinkling, crinkling
....Winding of web or sheet
....Uniting to separate core
....Spherical core
....Tubular core
....Sequential winding of separate webs
....About irregular or configured mandrel surface
....Sequential winding of separate webs
....With additional assembly (other than winding)
....Prior to winding
....With cutting of wound body (excludes nominal cutoff)
....With reshaping of wound body
....Longitudinally progressive helical winding
....With permanent bending or reshaping or surface deformation of self sustaining lamina
....By separating laminae between spaced secured areas (e.g., honeycomb expanding)
...By inward collapsing of portion of hollow body
...Running or continuous length work
....Longitudinal bending
....Prior to or during assembly with additional lamina
....Overedge bending or overedge folding
....And edge-joining of one piece blank to form tube
....Folding
....Transverse corrugating
....Subsequent to assembly of laminae
....With deformation or cutting of corrugated lamina
....Treating material of corrugated lamina or dry adhesive thereon to render tacky
....Surface deformation only (e.g., embossing)
....To form undulated to corrugated sheet and securing to base with parts of shaped areas out of contact
....With slitting or removal of material at reshaping area prior to reshaping
....By bending, drawing or stretch forming sheet to assume shape of configured lamina while in contact therewith
....Encasing or enveloping the configured lamina
....With preshaping of lamina
....Flexible sheet to cylinder lamina
....Overedge bending of lamina about edges of sheetlike base
....Bending of one piece blank and joining edges to form article
....Hollow cylinder article
....Surface deformation only of sandwich or lamina (e.g., embossed panels)
....Subsequent to lamination
....Subsequent to assembly
....Of parallel stacked sheets only
....Bending of one lamina only
....To form dished or receptacle-like product
....Folding only
...By folding
...Of preshaped laminae between closed similarly shaped press platens or clamps
...With stretching
...Direct contact transfer of adhered lamina from carrier to base
...With formation of lamina of continuous length by molding or casting on endless carrier
...Carrier is configured mold
...Metal foil lamina
...Of portion only of lamina from carrier
...Plural transferring operations and/or with additional laminating
...Solvent other than water to release lamina
...Coating of transferred lamina
...Running or continuous flexible web carrier
...Plural superimposed laminae transferred
...Transfer of printing or design
...To base coated with adhesive
...With lamina formation by molding or casting
...Forming plural continuous web laminae
...By extrusion
...Encapsulating or enclosing a lamina
...Hollow article or lamina
...Differential fluid pressure used
...Specific nonuniform lamina or article; e.g., netting or rib and groove, etc.
...With printing
...Electrical, magnetic, or wave energy used
...With cutting, severing, or perforating
...After bonding; e.g., as finishing step, etc.
...Differential fluid pressure used
...Bonding spaced preforms
...Pretreatment
...Post-treatment
...Article or at least one lamina of nonuniform thickness or discontinuous
...Bonding in specified environment (other than temperature)
...Pressure assisted bonding
...In configured mold
...On temporary planar support (e.g., film casting)
...With stripping of adhered lamina
...With cutting of one lamina only while adhered
...And assembly with different lamina
...With cutting, punching, tearing or severing
...And simultaneously bonding (e.g., cut-seaming)
...Perforating lamina
...Subsequent to assembly of laminae
...Cutting to shape joining edge surfaces only
...Continuous longitudinal slitting
...Bonding face to face of laminae cut from single sheet
...Punching and bonding pressure application by punch
...Closure cap liner applying type
...Separate cutting of separate sheets or webs
...Of plural laminae from single stock and assembling to each other or to additional lamina
...Applying plural cut laminae to single face of additional lamina
...Joining of cut laminae end-to-end
...Flash, trim or excess removal
...Partial cutting bonded sandwich (e.g., grooving or incising)
...Of continuous or running length bonded web
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CLASS 156 ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE

270 ....One web only
271 ....Continuous longitudinal slitting
272.2 ..With direct application of electrical, magnetic, or radiant energy to work
272.4 ...Involving magnetically susceptible lamina or incorporating into the work a particulate susceptor material having magnetic properties
272.6 ...Exposure of work to corona or glow discharge
272.8 ...Exposure of work to laser
273.1 ...Developing electrostatic charge
273.3 ...Before final assembly; e.g., to cure lamina, etc.
273.5 ....Before and after final assembly
273.7 ...Applying pressure before electrical, magnetic, or radiant energy
273.9 ...Work constitutes conductor of electrical circuit
274.2 ....Conductor is a coil
274.4 ...Exposure of work to electrode
274.6 ....Continuously moving work in relation to electrode
274.8 ....With application of adhesive
275.1 ...Only part of containing lamina surfaces bonded; e.g., seaming, etc.
275.3 ....With application of adhesive
275.5 ...To polymerize or cure material in work
275.7 ...With application of adhesive
276 ...With mass application of nonadhesive fibers or particles between laminae
277 ..With printing
278 ..With coating of nonadherent face of lamina
279 ...Coating with fibers or particles
280 ...Subsequent to bonding
281 ...Combined; e.g., with cleaning, etc.
282 ...Simultaneous heating and cooling
283 ...Adhesive applied as dry particles
284 ...Treating particle with liquid to render tacky
285 ..Direct application of vacuum or fluid pressure during bonding
286 ...To remove gas from between assembled laminae
287 ...To the lining of hollow body
288 ..Simultaneous pressure application to at least two separate sandwiches
289 ..Utilizing parting or release material to prevent adhesion
290 ..Bonding of facing continuously contacting laminae at spaced points only
291 ...By nonuniform adhesive application
292 ...Of laminae having opposed facing areas out of contact
293 ..Inserting of lamina in hole, aperture or recess of other lamina and adherence to side walls thereof
294 ...Core within tube
295 ..Adhesive applying to restricted area and spreading thereof by assembly pressure
296 ..Strands, rods, tubes or sticklike bodies to each other only
297 ..Of discrete laminae to single face of additional lamina
298 ...Embedding of laminae within face of additional laminae
299 ...All laminae planar and face to face
300 ....With covering of discrete laminae with additional lamina
301 .....Opposed laminae are running length webs
302 .....Lamina is running length web
303 .....Feeding of discrete laminae from separate sources
303.1 ..Inserting lamina into preformed plastic body
304.1 ..Butt edge joining of laminae
304.2 ...Joining of nonplanar elements; e.g., configured hollow objects, etc.
304.3 ...With joiner member or reinforcement
304.4 ....Carpet or fabric joined
304.5 ...With preliminary edge treatment or joining of edges of irregular shape; e.g., tongue and groove, beveled, etc.

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304.6 ...By heat
304.7 ...Of carpet or fabric
305 ...By applying after assembly an adhesive, solvent or chemical activating agent
306.3 ...By pressure or drying only, without tack; e.g., for easy delamination, etc.
306.6 ...Using single, preformed, diverse bonding lamina between other laminae
306.9 ...Including curing of nonfully polymerized material
307.1 ...By curing of nonfully polymerized self-sustaining lamina
307.3 ...With coating or impregnating a face to be adhered
307.4 ....Indefinite plurality of similar impregnated thin sheets; e.g., "decorative laminate" type, etc.
307.5 ....Coating solidified; e.g., by drying, etc., before assembly
307.7 ...Including uncurable lamina; e.g., metal, paper, etc.
308.2 ...By tackifying substance of self-sustaining lamina to be bonded; e.g., autogenous bonding, etc.
308.4 ...Only part of contacting laminae surfaces bonded; e.g., seam, seal, etc.
308.6 ...With treating agent application to a surface
308.8 ....Plural agents applied sequentially or to different laminae or using water as sole agent
309.3 ....Diverse laminae
309.6 ....Involving defined plastic flow or melting of entire lamina
309.9 ....With heating of lamina prior to assembly
310 ...Of laminae having a different coating on at least two mating surfaces
311 ...Sequential heating and cooling during pressure applying
312 ...Sequential different pressure applying
313 ...Interposing intermediate laminate between non-coated laminae
314 ...Sequentially applying different liquids or liqueefiable materials to adhering face of lamina
315 ...At least two liquids rubber and/or resin-containing
316 ...First applied liquid acid-containing
317 ...Protein-containing liquid
318 ...Carbohydrate-containing liquid
319 ...One liquid containing inorganic material only
320 ...Heating of dry adhesive on lamina prior to assembly contact
321 ...Heating adhesive by contacting with heated lamina
322 ...Heating lamina prior to assembly or adhesive applying
323 ...Interposing subsequently removed flexible element between lamina and a pressure applying surface
324 ...Running or continuous webs of indefinite length
324.4 ...By tackifying a single lamina of intermediate laminate
325 ...Particular adhesive
326 ...Organic containing
327 ...Synthetic resin containing
328 ...With carbohydrate and/or protein or derivatives thereof
329 ...Silicon resin
330 ...Epoxy resin
330.9 ...Nitrogenous resin
331.1 ....With polymerization completion, i.e., curing, after assembly
331.2 .......N only in unlinked side-chain or side-ring
331.3 .......Derived from aldehyde or ketone
331.4 .......Iso- or thio-cyanate moiety reacted in curing
331.5 .......N in a ring
331.6 .......N only in unlinked side-chain or side-ring; e.g., polyvinyl, pyridine, etc.
331.7 .......Derived from iso- or thio-cyanate; e.g., polyurethane, etc.
331.8 .......Derived from acyclic compound containing N
...And aldehyde, ketone, or carboxyclic moiety-containing compound

Polycarboxylic acid ester resin

Halogenated hydrocarbon resin

Hydrocarbon resin

Phenolic-aldehyde resin

Protein and/or carbohydrate containing and/or derivatives thereof

Bituminous containing

Natural rubber containing

Delaminating, per se; i.e., separating at bonding face

Delaminating process responsive to feed or shape at delamination

Using solvent during delaminating (e.g., water dissolving adhesive at bonding face during delamination, etc.)

Using specified organic delamination solvent

Using vibration during delaminating

Using direct fluid current against work during delaminating

Using vacuum directly against work during delaminating

Using air blast directly against work during delaminating

Changing dimension during delaminating (e.g., crushing, expanding, warping, etc.)

Using shrinking or swelling agent during delaminating

Temperature change for delamination (e.g., heating during delaminating, etc.)

Electromagnetic radiation applied to work for delamination (e.g., microwave, UV, IR, etc.)

Sintering for delamination

Gripping and pulling work apart during delaminating

Using roller for delamination (e.g., roller pairs operating at differing speeds or directions, etc.)

...With poking during delaminating (e.g., jabbing, etc.)

...Piercing layer during delaminating (e.g., cutting, etc.)

...With shearing during delaminating

...Delaminating from release surface

DIFFERENTIAL FLUID ETCHING APPARATUS

For liquid etchant

..With mechanical polishing (i.e., CMP-chemical mechanical polishing)

...With measuring, sensing, detection or process control means

...With wafer retaining ring

...With measuring, sensing, detection or process control means

...With endpoint detection means

...Liquid etchant spray means

...With means to supply, remove, or recycle liquid etchant outside of etching tank or chamber (e.g., supply tanks or pipe network)

...With mechanical mask or shield or shutter for shielding workpiece

...Running length workpiece (e.g., etching indeterminate length strip)

...Liquid etchant spray type

...With plural etching zones for a single discrete workpiece in apparatus

...With specified workpiece support

...With measuring, sensing, detection or process control means

...For endpoint detection

...For detection or control of pressure or flow of etchant gas

...For temperature detection or control

...For detection or control of electrical parameter (e.g., current, voltage, resistance, power, etc.)
345.29 .With etchant gas supply or exhaust structure located outside of etching chamber (e.g., supply tank, pipe network, exhaust pump, particle filter)
345.3 .With mechanical mask, shield or shutter for shielding workpiece
345.31 .With means for passing discrete workpiece through plural chambers (e.g., loadlock)
345.32 ..With robot arm connected by doors to plural other chambers (i.e., cluster tool)
345.33 ..With gas inlet structure (e.g., inlet nozzle, gas distributor)
345.34 ..Showerhead-type
345.35 ..With means for passing discrete workpiece through plural chambers (e.g., loadlock)
345.36 ..By microwave
345.37 ..With heating or cooling means for apparatus part other than workpiece support
345.38 ..With multiple gas energizing means associated with one workpiece etching
345.39 ..With means to generate and to direct a reactive ion etchant beam at a workpiece
345.4 ..With means to direct electron beam or ion beam to a gas to energize the gas
345.41 ..With microwave gas energizing means
345.42 ..With magnetic field generating means for control of the etchant gas
345.43 ..Having glow discharge electrode energizing means
345.44 ..Electrically coupled to a power supply or matching circuit
345.45 ..Including more than two electrodes (e.g., triode reactors)
345.46 ..With magnetic field generating means for control of the etchant gas
345.47 ..Parallel plate electrodes
345.48 ..With radio frequency (rf) antenna or inductive coil gas energizing means
345.49 ..With magnetic field generating means for control of the etchant gas
345.5 ..With means for photochemical energization of a gas using ultraviolet, visible, or x-ray radiation
345.51 ..With workpiece support
345.52 ..With means to heat the workpiece support
345.53 ..With means to cool the workpiece support
345.54 ..With means to move the workpiece inside the etching chamber
345.55 ..With means to cause rotary movement of the workpiece
346 .With surface deformation means
347 .With edge treatment means
348 .With means for photochemical energization of a gas using ultraviolet, visible, or x-ray radiation
349 ..With workpiece support
350 ..With means to heat the workpiece support
351 ..With means to cool the workpiece support
352 ..With means to move the workpiece inside the etching chamber
353 ..Responsive to feed of article to which cut piece is applied
354 ..Responsive to feed of articles to assembly station
355 ..Responsive to presence, absence, or condition of article to which applied
356 ..Responsive to presence, absence, or condition of article to which applied
357 ..Responsive to feed of articles to assembly station
358 ..Responsive to feed of articles to assembly station
359 ..Responsive to feed of articles to assembly station
360 ..Responsive to feed of articles to assembly station
361 ..Responsive to feed of articles to assembly station
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368. For starting or stopping machine operation
378. With testing, measuring, and/or indicating means
379. With inspecting and/or illuminating means
379.6. With means applying wave energy or electrical energy directly to work
379.7. To an electrically conductive lamina or component incorporated into the work
379.8. With means to assemble laminae or position them relative to each other
379.9. With plural diverse heating means
380.1. With tube-forming means
380.2. With electrode or coil member contacting work
380.3. Electrodes on opposing sides of smallest dimension of work
380.4. With means moving one electrode toward the other electrode
380.5. With means to change the configuration of a lamina, e.g., folding, deforming, etc.
380.6. With electrode having a mechanical function; e.g., pressing, etc.
380.7. Cutting, tearing, or breaking function
380.8. Shaping or deforming function; e.g., patterned electrode, etc.
380.9. With radiant heater not touching work
381. Chamber enclosing work during bonding and/or assembly
382. Evacuated or fluid pressure chamber
383. Means encasing separate nonadhered part between adhered laminae
384. With printing
385. Simultaneous with bonding
386. Printing member also bonds
387. Printing
388. After bonding
389. Including cleaning, conditioning or renewing means for apparatus

390. With coating means for work (other than laminating adhesive)
391. Work-secured and/or work-guided
392. Pipe wrapping type
393. With braiding or weaving means
394.1. Tire body building type
395. Means delaminating protective liner from lamina
396. Multiple discrete building forms and/or means advancing a building form through multiple work stations
397. Means building tires from strands or narrow tapes
398. Means operating on the bead portion of the tire
399. Means trimming fabric adjacent bead
400. Means folding carcass fabric about a bead
401. Inflatable bag type
402. Disc or roller type
403. Means placing bead ring on tire carcass
404. Solid tire building type
405.1. With fabric or tread stock feeding means
406. Means selecting stock from multiple source
406.2. For transporting discrete ring-shaped lamina
406.4. With cutting, heating, laminating, or shaping means upstream of assembling means
406.6. Stretching means
407. Centerless core or off-center support of annular tire structure
408. Relative traversing motion between rotating tire supporting structure and pressing or bending means
409. Compound traversing motion
410. With changing direction of force of pressing or bending means with respect to the axis of rotation of the supporting structure (e.g., curved drum)
411. Pressing means manually advanced toward the axis or rotation of the supporting structure
...Resilient or deformable surface pressing or bending element
...Plural sequential pressing or bending elements
...Building drums, per se
...Axially or widthwise adjustable or collapsible
...Resilient and/or inflatable core
...Collapsible
...Rack and pinion type actuator
...Resilient spring actuated
...Toggle linkage lever type actuator
...Stitching elements, per se
...Tire chamber and means regulating interior casing pressure
...With means for folding lamina while on drum
...Tire support with pressing or heating means
...Ring-shaped lamina stretching means
...Tire bead ring winding type
...Means assembling part within hole or aperture (telescoping)
...Electric lamp or space discharge device envelope basing type
...Longitudinally progressive helical winding means
...With means cutting wound body to form sheet or web
...Strands secured to web
...Forming and/or covering indefinite length article
...Rotating core or mandrel
...By winding plural strands or webs
...About circular section core or mandrel
.....Plural discrete axially spaced winding means
.....Indefinite or running length flexible strand, rod, tube, or filament uniting
.....Means applying transverse spacers to spaced parallel strands
.....Pile fabric making type
.....To indefinite or running length web
...With means forming web by calendering
...With means folding web longitudinally
...Transversely of web
...Reciprocating feed means for strand
...Means gathering strands or filaments only into indefinite length
.Envelope sealing type
...With stamp applying means
...With bending or folding means
...With feeding means
...Reciprocating feed
...Work traversing type
...Pneumatic blast to bend work
...About preformed sphere
...Rotating mandrel or article
...Means registering sheet with selected peripheral portion of rotating article
...Translating axis of rotation
...Rolling mandrel or article
...Winding flexible web
...Article rolls across sheet stack
......By gravity
......Belt feed
......Axis translates in circular path
...Centerless core or mandrel
...Means serially feeding mandrel or article to applying station
...For an indefinite or running length flexible web
...Tire bead or endless belt covering type
...Longitudinal bending
....Corrugating
....Plural sequential bending means
....And means feeding discrete articles to web
....Single web only
.....Tube-making type
.....And means uniting noncoextensive plural webs
....Means bending to configuration of part to which secured
...Transverse withdrawal of shaping or shape-retaining elements

...And means applying separate web to shaped web

...While still on shape-retaining means

......Fluted roll-shape retainer

......Separate means holding web in flutes

...Pleating means

...To configuration of part to which secured

...Plural discrete bending means, each acting on separate article

...Plural, distinct, sequential bending or folding means

......Intersecting bend axis

......Means bending sheet over edges of planar part

......With separate member pressing bent sheet corner at axis intersection

......Arcuate bending

......Having intersecting axes of force

......Flexible sheet across through passage for work

......Sheet applied to passage

......With additional separate smoothing means

...Member travels along configured part

......Flexible bristle wiping surface

......Bodily deformable pad type

......Opposed movable biased members

......Positively actuated to intermittently defeat bias

......Cam defeats bias

......By swinging folding member approaching part

......Deformable pad

oby stretching or tensioning means

oby driven web feeding means

...To transversely stretch or tension the web

oby gas, vapor, or flame contact means for work

oby work cooling means

oby separate (nonpress) heating means for work

....With casting, plastic molding, or extruding means

....With means generating at least one self-sustaining web (e.g., film casting)

....Means joining flexible indefinite length or endless bodies end-to-end (e.g., film, tape, belt splicers)

....Tube splicing type (e.g., inner tube)

....Moving web (flying splice or with web accumulating means)

....Means applying adhesive tape to joint only

....With severing means for tape before application

....Longitudinally moving web support moving web ends into association

....With scraper or adhesive applying means

....With scraper or adhesive applying means

....With cutting, punching, piercing, severing, or tearing

....Plural severing means each acting on a different work piece

....Severing followed by associating with part from same source

....Means making hole or aperture in part to be laminated

....And securing separate part over hole or aperture

....Cutting element simultaneously bonds (e.g., cut seaming)

....Means feeding plural workpieces to be joined

....Severing before bonding or assembling of parts

....Severing means or member secured thereto also bonds

....Delivering cut part to indefinite or running length web

.....Cutter also delivers cut piece

.....Delivering cut part in sequence to serially conveyed articles

.....Cutting indefinite length web after assembly with discrete article
CLASS 156 ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE

523 Work traversing type
524 With liquid applying means
525 Slitting and severing
526 Cutting after bonding
527 Fixed cutter
528 Stamp from multiple row sheet type
529 With means projecting fluid against work
530 Cutter actuated by or secured to bonding element
531 With liquid applicator
532 Common actuator for bonding and liquid applying means
533 Liquid applied to web before cutting
534 Roller applicator
535 With means shaping, scarifying, or cleaning joining surface only
536 Combined and/or convertible
537 With bond interfering means (slip sheet, etc.)
538 With work feeding or handling means
539 For plural parts or plural areas of single part
540 Lamina transferred to base from adhered flexible web or sheet type carrier
541 Discrete spaced laminae on adhered carrier
542 Means serially presenting discrete base articles or separate portions of a single article
543 Indefinite or running length work
544 Means joining indefinite length work edge to edge
545 Means applying adhesively secured tape to seam
546 Means applying fluid adhesive to work edge
547 Means applying fluent adhesive or adhesive activator material between layers
548 At spaced areas
549 Plural indefinite length or running length workpieces
550 Fluid applied to nip between indefinite length webs
551 Fluid applied to plural workpieces
552 Means bringing articles into association with web
553 Discontinuous, spaced area, and/or patterned pressing
554 Webs of different width, longitudinally aligned
555 Progressive continuous bonding press (e.g., roll couples)
556 Means bringing discrete articles into assembled relationship
557 Plural lines and/or separate means assembling separate sandwiches
558 All articles from single source only
559 At least three articles
560 At least two applied side by side to common base
561 Plural ranks
562 Sheet form common base
563 Stacked serially
564 Magazine stack directly contacting separate work
565 Magazine movable to work
566 Means simultaneously conveying plural articles from a single source and serially presenting them to an assembly station
567 Turret or rotary drum-type conveyer
568 For flexible sheets
569 Means separating articles from bulk source
567 Stacked sheet source
570 Rotary or pivoted picker
571 Translating picker
572 Magazine stack directly contacting work
573 Work traversing type and/or means applying work to wall or static structure
574 With liquid applying means
575 Grip or clamp for web end
576 Implement carried web supply
577 With liquid adhesive or adhesive activator applying means
578 .With handle or handgrip
579 Presses or press platen structures, per se
580 .With sonic or ultrasonic means

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...Specified structure of sonic or ultrasonic work contacting surface
581 ...Relieved or configured pressing face
582 ...Rotary
583.1 ...Heated
583.2 ...Impulse heating
583.3 ...With significantly flexible platen
583.4 ...Nonuniform heating
583.5 ...With endless belt
583.6 ...C-frame type
583.7 ...Electric heating
583.8 ...Hinged platen
583.9 ...Electric heating
583.91 ...Plural adjustable pressure points
750 DELAMINATING MEANS
751 ...Delaminating means responsive to feed or shape at delamination
752 ...Heating or cooling delaminating means (e.g., melting means, freezing means, etc.)
753 ...Electromagnetic radiation delaminating means (e.g., microwave, UV, IR, etc.)
754 ...Vibrating delaminating means
755 ...Differential fluid pressure delaminating means
756 ...Spraying delaminating means (e.g., atomizer, etc.)
757 ...Air blasting delaminating means
758 ...Vacuum delaminating means (e.g., vacuum chamber, etc.)
759 ...Delaminating roller means
760 ...Roller pair delaminating means
761 ...Severing delaminating means (e.g., chisel, etc.)
762 ...Cutting delaminating means
763 ...Shearing delaminating means
764 ...Delaminating bending means
765 ...Poking delaminating means
766 ...Corner edge bending delaminating means
767 ...Means for delaminating from release surface
598 MISCELLANEOUS

OFF-DRUM MANUFACTURE OF TIRE FABRIC OR PLY
906 ...Including assembly of bias-cut fabric
907 LAMINATING SHEET TO ENTIRE EDGE OF BLOCK AND BOTH ADJACENT OPPOSITE SURFACES; E.G., BOOKBINDING, ETC.
908 APPARATUS FOR APPLYING NEW TREAD TO USED TIRE CASING; E.G., RETREADING, RECAPPING, ETC.
909 BONDING TIRE CORD AND ELASTOMER: IMPROVED ADHESIVE SYSTEM
910 DIFFERENTIAL ETCHING APPARATUS HAVING A VERTICAL TUBE REACTOR
911 DIFFERENTIAL ETCHING APPARATUS HAVING A HORIZONTAL TUBE REACTOR
912 DIFFERENTIAL ETCHING APPARATUS INCLUDING PARTICULAR MATERIALS OF CONSTRUCTION
913 DIFFERENTIAL ETCHING APPARATUS INCLUDING FOCUS RING SURROUNDING A WAFER FOR PLASMA APPARATUS
914 DIFFERENTIAL ETCHING APPARATUS INCLUDING CHAMBER CLEANING MEANS OR SHIELD FOR PREVENTING DEPOSITS
915 DIFFERENTIAL ETCHING APPARATUS HAVING A BARREL REACTOR
916 DELAMINATING PROCESSES ADAPTED FOR SPECIFIED PRODUCT (E.G., DELAMINATING MEDICAL SPECIMEN SLIDE, ETC.)
917 ...Delaminating in preparation for post processing recycling step
918 ...Textile delaminating in preparation for recycling (e.g., carpet, etc.)
919 ...Delaminating container component in preparation for recycling (e.g., glass bottle, plastic bottle, etc.)
920 ...Specified electronic component delaminating in preparation for recycling
921 ...Delaminating wire or optical fiber laminate (e.g., coaxial cable, optical cable, etc.)
922 ...Delaminating display screen (e.g., cathode-ray, LCD screen, etc.)
923 ...Delaminating display screen using sintering for delamination
924
..Delaminating recording media
  (e.g., DVD, CD, HD, flash memory, etc.)
..Delaminating vehicle component
  (e.g., brake pad, etc.)
  ...Delaminating tire (e.g., tread from carcass, etc.)
.Delaminating component from
  building (e.g., wall paper, shingle, etc.)
.Semiconductive product
  delaminating (e.g., delaminating semiconductive wafer from underlayer, etc.)
..Peeling away backing
  ...With poking during delaminating (e.g., jabbing release sheet backing to remove wafer, etc.)

\section*{APPARATUS HAVING DELAMINATING MEANS ADAPTED FOR DELAMINATING A SPECIFIED ARTICLE}
.Delaminating means in preparation for post consumer recycling
..Means for delaminating container component in preparation for recycling
  (e.g., glass bottle, plastic bottle, etc.)
..Means for delaminating specified electronic component in preparation for recycling
..Means for delaminating record media for recycling (e.g., CD, DVD, HD, flash memory, etc.)
..Means for delaminating vehicle component (e.g., tread from carcass, brake pad, etc.)
..Means adapted for delaminating component from building (e.g., wall paper, shingle, etc.)
..Means for delaminating semiconductive product
..With reorientation means
..With poking delaminating means
  (e.g., jabbing means, etc.)

\section*{FOREIGN ART COLLECTIONS}

\section*{FOR 000 CLASS-RELATED FOREIGN DOCUMENTS METHODS (156/1)}
FOR 100 .Delaminating, per se (156/344)

\section*{FOR 101 DELAMINATING APPARATUS (156/584)}

\section*{DIGESTS}
\begin{enumerate}
  \item \textbf{LABELLING FLAT, ESSENTIALLY RIGID SURFACES (1/100)}
  \begin{enumerate}
    \item \textbf{DIG 1} .Affixing labels to one flat surface of articles; e.g., of packages, of flat bands (1/02)
    \item \textbf{DIG 2} .Affixing labels; e.g., wrap-around labels, to two or more flat surfaces of a polyhedral article (1/04)
    \item \textbf{DIG 3} ..Of a box; e.g., cigarette box (1/06)
  \end{enumerate}
  \item \textbf{LABELLING OTHER THAN FLAT SURFACES (3/00)}
  \begin{enumerate}
    \item \textbf{DIG 6} .Affixing labels to elongated objects; e.g., wires, cables, bars, tubes (3/02)
    \item \textbf{DIG 7} ..Applying bands or labels to cigars or cigarettes (3/04)
    \item \textbf{DIG 8} .Affixing labels to short rigid containers (3/06)
    \item \textbf{DIG 9} ..To container bodies (3/08)
    \item \textbf{DIG 10} ...The container being positioned for labelling with its centerline horizontal (3/10)
    \item \textbf{DIG 11} .....By rolling the labels onto cylindrical containers; e.g., bottles (3/12)
    \item \textbf{DIG 12} ...The container being positioned for labelling with its centerline vertical (3/14)
    \item \textbf{DIG 13} .....By rolling the labels onto cylindrical containers; e.g., bottles (3/16)
    \item \textbf{DIG 14} ..To container necks (3/18)
    \item \textbf{DIG 15} ..To bottle closures (3/20)
    \item \textbf{DIG 16} ...Affixing metal foil coverings (3/22)
    \item \textbf{DIG 17} ...Affixing labels indicating original state of bottle snap or screw closure (3/24)
    \item \textbf{DIG 18} .Affixing labels to nonrigid containers; e.g., bottles made of polyethylene, boxes to be inflated by internal air pressure prior to labelling (3/26)
  \end{enumerate}
\end{enumerate}
DIG 19  Labelling fabrics or comparable materials or articles with deformable surface, e.g., paper, fabric rolls, stockings, shoes (5/00)

DIG 20  Using adhesives (5/02)
DIG 21  Thermo-activatable adhesives (5/04)
DIG 22  Using staples (5/06)
DIG 23  Affixing tags (7/00)

DIG 24  Details of labelling machines or apparatus (9/00)
DIG 25  Devices for moving articles, e.g., containers, past labelling station (9/02)
DIG 26  Having means for rotating the articles (9/04)
DIG 27  Devices for presenting articles in predetermined attitude or position at labelling station (9/06)
DIG 28  Label feeding (9/08)
DIG 29  Label magazines (9/10)
DIG 30  Removing separate labels from stacks (9/12)
DIG 31  By vacuum (9/14)
DIG 32  By wetting devices (9/16)
DIG 33  Label feeding from strips; e.g., from rolls (9/18)
DIG 34  Gluing the labels or articles (9/20)
DIG 35  By wetting (9/22)
DIG 36  By heat (9/24)
DIG 37  Devices for applying labels (9/26)
DIG 38  Air-blast devices (9/28)
DIG 39  Rollers (9/30)
DIG 40  Cooperating rollers between which articles and labels are fed (9/32)
DIG 41  Flexible bands (9/34)
DIG 42  Wipers; pressers (9/36)
DIG 43  Label cooling or drying (9/38)
DIG 44  Controls; safety devices (9/40)
DIG 45  Label feed control (9/42)
DIG 46  By special means responsive to marks on labels or articles (9/44)
DIG 47  Applying date marks, code marks, or the like to the label during labelling (9/46)

DIG 48  Manually controlled or manually operable label dispensers; e.g., modified for the application of labels to articles (11/00)
DIG 49  Having printing equipment (11/02)
DIG 50  Having means for moistening the labels (11/04)
DIG 51  Having means for heating thermoactivable labels (11/06)