**METHODOLOGY**

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.

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<th>No.</th>
<th>Description</th>
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<td>39</td>
<td>Plaster board making</td>
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<td>40</td>
<td>With bending or folding of facing sheet</td>
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<td>41</td>
<td>With water-proofing with added material</td>
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<td>42</td>
<td>With embedding of reinforcing material during or subsequent to core formation</td>
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<td>Perforating</td>
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<td>Making electrical conductors of indefinite length</td>
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<td>48</td>
<td>With filling of void or cavity with fluent material</td>
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<td>49</td>
<td>Splicing</td>
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<td>50</td>
<td>With mechanical working of conductor</td>
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<td>51</td>
<td>Covering of conductor</td>
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<td>52</td>
<td>With preformed material</td>
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<td>53</td>
<td>Wrapping of sheet material (e.g., tape) about conductor and/or conductor assembly</td>
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<td>54</td>
<td>By longitudinally bending sheet</td>
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<td>55</td>
<td>Plural spaced conductors</td>
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<td>56</td>
<td>Plural covering operations</td>
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<td>57</td>
<td>Maintaining the natural appearance of plants or animal parts</td>
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<td>58</td>
<td>Contour or profile photography to reproduce three-dimensional objects</td>
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<td>59</td>
<td>Relief or intaglio representations of three-dimensional objects (e.g., relief modeling of photographs)</td>
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<td>60</td>
<td>Surface bonding and/or assembly thereafter</td>
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<td>61</td>
<td>Simulated products of nature</td>
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<td>62</td>
<td>With manual drawing or engraving</td>
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<td>62.2</td>
<td>With formation of lamina by bulk deposition of discrete particles to form self-supporting article</td>
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<td>62.4</td>
<td>Liberation or formation of fibers</td>
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<td>62.6</td>
<td>By joining portions of batt to itself</td>
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<td>62.8</td>
<td>To similarly formed batt</td>
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<td>63</td>
<td>Manually arranging different colored or shaped discrete elements to form design</td>
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<td>64</td>
<td>With measuring, testing, or inspecting</td>
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<tr>
<td>65</td>
<td>Of multiple spaced elements between and transverse of parallel webs (e.g., Venetian blind ladders)</td>
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<td>66</td>
<td>Adhesive application of fasteners to articles (e.g., slide fastener to garment)</td>
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<td>67</td>
<td>Utilizing phosphorescent or fluorescent material</td>
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<td>68</td>
<td>With fur removal from animal pelt</td>
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<td>69</td>
<td>Application of end closures to containers</td>
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<td>70</td>
<td>Encasing movable or loosely confined element between adhering lamina (e.g., drawstrings)</td>
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<td>71</td>
<td>Of lamina to building or installed structure</td>
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<td>72</td>
<td>Setting or embedding tufts or discrete pile elements onto backing (e.g., rugs, brushes, etc.)</td>
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<td>73.1</td>
<td>With sonic or ultrasonic treatment</td>
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<tr>
<td>73.2</td>
<td>Rod, strand, or filament</td>
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<td>73.3</td>
<td>With sonic or ultrasonic cutting</td>
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<td>73.4</td>
<td>Sheet or web splicing</td>
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<td>73.5</td>
<td>Friction treatment (e.g., welding)</td>
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<td>73.6</td>
<td>Vibratory treatment</td>
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<td>74</td>
<td>With application of centrifugal force</td>
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<tr>
<td>75</td>
<td>With balancing of product</td>
</tr>
<tr>
<td>76</td>
<td>With parchmentizing or transparentizing</td>
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</tbody>
</table>

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..With pore forming in situ to form cellular lamina
91 ..With separate permanent mechanical joining means
78 ...Foaming (riveted, sewed, stapled, etc.)
79 .....Subsequent to assembly of laminae
92 ...With penetrating of fastener
80 ....With refrigeration or freezing
93 .....Sewing
81 ....With melting or gasification of permanently associated solid material in situ in airtight cavity
94 ...Reclaiming, renewing or repairing articles for reuse
82 ....With flame contact of lamina
95 ...Toroidal shapes (e.g., tire or tube)
83 ....With swelling of material of lamina
96 ....Adhesively secured tire retreads
84 ...Subsequent to assembly of laminae
97 ....Puncture repairing
85 ....Of lamina covering cylindrical or spherical body
98 ...With removal of defective area to be repaired
86 ...Providing escapeways for gases trapped or generated between layers
100 ...Variegated colored lamina or interlayer
87 ...Pray-prevention by bonding
101 ...With cutting or breaking or partial removal of interlayer and/or lamina
89.11 ...With vitrification or firing ceramic material
102 ...With deformation or shaping of interlayer and/or lamina
89.12 ...Forming electrical article or component thereof
103 ...With application of plural sequential pressures
89.13 ....Elemental carbon containing (e.g., graphite, etc.)
104 ...With air evacuation between laminae
89.14 ...Inorganic titanate compound containing
105 ...Directly applied fluid pressure
89.15 ....Nitride compound containing
106 ...With preformed intermediate adhesive layer
89.16 ....Elemental metal or alloy containing
107 ...Sandwich edge sealing
89.17 .....Silver containing
108 ...Mounting transparent lamina over window opening (e.g., slide-mounting)
89.18 .....Copper containing
109 ...Multipane glazing unit making (e.g., air-spaced panes)
89.19 .....Tungsten containing
110.1 ...Making flexible or resilient toroidal shape; e.g., tire, inner tube, etc.
89.21 .....Molybdenum containing
111 ...Moving work progressively to separate assembly stations
89.22 ...Honeycomb-like
112 ...Solid tire type (i.e., nonpneumatic)
89.23 ...With wax or wax-like processing aid
113 ....Having cushioning void or cavity
89.24 ...Coloring agent containing
114 ...Incorporation of solid nonrubber material at exposed tread surface of tire (e.g., anti-skid)
89.25 ...Elemental carbon containing (e.g., graphite, etc.)
115 ...Applying flowable puncture sealing material
89.26 ....Carbon fibers or filaments
90 ...Utilizing layer to prevent migration or bleeding between laminae
89.27 ...Nitride compound containing
91 ...With separate permanent mechanical joining means
89.28 ...Elemental metal or alloy containing
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<td>117</td>
<td>Building tires directly from strands or cords</td>
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<td>118</td>
<td>Tubular (airtight) torus (e.g., auto tube-making)</td>
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<td>Multichamber safety tube</td>
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<td>Valve-applying</td>
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<td>121</td>
<td>Applying reinforcing material to external tube surface</td>
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<td>Joining tube ends to form torus</td>
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<td>At least one layer including metal cords</td>
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<td>Axially assembling preformed flexible endless bands</td>
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<td>127</td>
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<td>By winding or including application of inextensible lamina under tread bond</td>
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<td>130.3</td>
<td>With specified procedure for interlocking of lamina or removal of air from therebetween; e.g., &quot;stitching&quot;, etc.</td>
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<td>130.5</td>
<td>With specified procedure for cooling or heating; e.g., for vulcanization, etc.</td>
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<td>130.7</td>
<td>With specified procedure for bead, carcass or sidewall formation</td>
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<td>Folding fabric about bead</td>
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<td>133</td>
<td>Applying fabric to form (e.g., carcass building)</td>
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<td>134</td>
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<td>Tire bead ring making</td>
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<td>137</td>
<td>Flexible endless drive belt making</td>
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<td>138</td>
<td>Forming grooves on inner surface</td>
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<td>139</td>
<td>&quot;V&quot; or trapezoid section belt</td>
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<td>With plastic shaping or molding</td>
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<td>Wrapping of belt prior to shaping</td>
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<td>142</td>
<td>With cutting to &quot;V&quot; or trapezoid section</td>
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<td>143</td>
<td>Helical wire or plural ring reinforced flexible tube making</td>
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<td>144</td>
<td>Assembling preformed helical coil or rings with separate tube</td>
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<td>145</td>
<td>With encapsulating of permanently fluent material in hollow or porous lamina or filling of space between adhered laminae</td>
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<td>Prior to bonding of laminae (e.g., golf balls)</td>
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<td>147</td>
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<td>148</td>
<td>With weaving, knitting, braiding, twisting or needling</td>
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<td>On adherent surface of lamina prior to assembly</td>
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<td>152</td>
<td>With temporary disassembling and subsequent bonding of same laminae</td>
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<td>With abrading or grinding of lamina</td>
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<td>154</td>
<td>Subsequent to assembly</td>
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<td>155</td>
<td>With destruction of solid transitory material; e.g., dissolving, melting, etc.</td>
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<td>156</td>
<td>With fluid pressure to prevent collapse of hollow structure during assembly and/or joining</td>
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<td>157</td>
<td>Joining indefinite length laminae end-to-end</td>
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<td>158</td>
<td>Of wire, rod, tube or filament</td>
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<td>With cutting of joining ends</td>
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<td>160</td>
<td>Bonding in stressed condition of at least one prestressed element</td>
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<td>During winding of lamina</td>
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<td>Bonding of sheets or webs only</td>
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<td>164</td>
<td>Running length web</td>
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<td>165</td>
<td>Stressing spherical or tubular body</td>
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<td>166</td>
<td>Bonding of flexible filamentary material while in indefinite length or running length</td>
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</table>
...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
...With 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... Article or at least one 
...Of preshaped laminae between... lamina of nonuniform thickness 
closed similarly shaped press or discontinuous 
plats or clamps...Bonding in specified 
...With stretching...environment (other than 
...Direct contact transfer of...temperature) 
adhered lamina from carrier to 
...With formation of lamina of...Pressure assisted bonding 
continuous length by molding 
or casting on endless carrier...In configured mold 
...Carrier is configured mold...On temporary planar support 
...Metal foil lamina... (e.g., film casting) 
...Of portion only of lamina from...With stripping of adhered 
carrier...lamina 
...Plural transferring operations...And assembly with different 
and/or with additional lamina 
...Solvent other than water to...With cutting, punching, tearing 
release lamina or severing 
...Coating of transferred lamina...Perforating lamina 
...Running or continuous flexible...And simultaneously bonding 
web carrier... (e.g., cut-seaming) 
...Plural superimposed laminae...Subsequent to assembly of 
transferred laminae 
...Transfer of printing or...Cutting to shape joining edge 
design...surfaces only 
...To base coated with adhesive...Continuous longitudinal 
...With lamina formation by...slitting 
molding or casting... 
...Forming plural continuous web... 
...By extrusion... 
...Encapsulating or enclosing a... 
...Hollow article or lamina...Bonding face to face of 
...Differential fluid pressure...laminae cut from single sheet 
used...Punching and bonding pressure 
...Specific nonuniform lamina...application by punch 
or article; e.g., netting or 
transferred...Closure cap liner applying 
rib and groove, etc...
type 
...With printing...Separate cutting of separate 
...Electrical, magnetic, or wave...sheets or webs 
energy used... 
...With cutting, severing, or... 
...After bonding; e.g., as 
perforating...finishing step, etc.
...Differential fluid pressure 
used... 
...Bonding spaced preforms... 
...Pretreatment... 
...Post-treatment... 
...Of continuous or running... 
length bonded web
..One web only

...Continuous longitudinal slitting

...With direct application of electrical, magnetic, or radiant energy to work

...Involving magnetically susceptible lamina or incorporating into the work a particular susceptor material having magnetic properties

...Exposure of work to corona or glow discharge

...Exposure of work to laser

...Developing electrostatic charge

...Before final assembly; e.g., to cure lamina, etc.

...Before and after final assembly

...Applying pressure before electrical, magnetic, or radiant energy

...Work constitutes conductor of electrical circuit

...Conductor is a coil

...Exposure of work to electrode

...Continuously moving work in relation to electrode

...With application of adhesive

...Only part of containing lamina surfaces bonded; e.g., seaming, etc.

...With application of adhesive

...To polymerize or cure material in work

...With application of adhesive

...With mass application of nonadhesive fibers or particles between laminae

...With printing

...With coating of nonadherent face of lamina

...Coating with fibers or particles

...Subsequent to bonding

...Combined; e.g., with cleaning, etc.

...Simultaneous heating and cooling

...Adhesive applied as dry particles

...Treating particle with liquid to render tacky

...Direct application of vacuum or fluid pressure during bonding

...To remove gas from between assembled laminae

...To the lining of hollow body

...Simultaneous pressure application to at least two separate sandwiches

...Utilizing parting or release material to prevent adhesion

...Bonding of facing continuously contacting laminae at spaced points only

...By nonuniform adhesive application

...Of laminae having opposed facing areas out of contact

...Inserting of lamina in hole, aperture or recess of other lamina and adherence to side walls thereof

...Core within tube

...Adhesive applying to restricted area and spreading thereof by assembly pressure

...Strands, rods, tubes or sticklike bodies to each other only

...Of discrete laminae to single face of additional lamina

...Embedding of laminae within face of additional laminae

...All laminae planar and face to face

...With covering of discrete laminae with additional lamina

......Opposed laminae are running length webs

......Lamina is running length web

......Feeding of discrete laminae from separate sources

......Inserting lamina into preformed plastic body

......Butt edge joining of laminae

......Joining of nonplanar elements; e.g., configured hollow objects, etc.

......With joiner member or reinforcement

......Carpet or fabric joined

......With preliminary edge treatment or joining of edges of irregular shape; e.g., tongue and groove, beveled, etc.
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 liquefiable 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

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331.9 ..And aldehyde, ketone, or carbocyclic moiety-containing compound
332 ..Polycarboxylic acid ester resin
333 ..Halogenated hydrocarbon resin
334 ..Hydrocarbon resin
335 ..Phenolic-aldehyde resin
336 ..Protein and/or carbohydrate containing and/or derivatives thereof
337 ..Bituminous containing
338 ..Natural rubber containing
701 ..Delaminating, per se; i.e., separating at bonding face
702 ..Delaminating process responsive to feed or shape at delamination
703 ..Using solvent during delaminating (e.g., water dissolving adhesive at bonding face during delamination, etc.)
704 ..Using specified organic delamination solvent
705 ..Using vibration during delaminating
706 ..Using direct fluid current against work during delaminating
707 ..Using vacuum directly against work during delaminating
708 ..Using air blast directly against work during delaminating
709 ..Changing dimension during delaminating (e.g., crushing, expanding, warping, etc.)
710 ..Using shrinking or swelling agent during delaminating
711 ..Temperature change for delamination (e.g., heating during delaminating, etc.)
712 ..Electromagnetic radiation applied to work for delamination (e.g., microwave, UV, IR, etc.)
713 ..Sintering for delamination
714 ..Gripping and pulling work apart during delaminating
715 ..Using roller for delamination (e.g., roller pairs operating at differing speeds or directions, etc.)

716 ..With poking during delaminating (e.g., jabbing, etc.)
717 ..Piercing layer during delaminating (e.g., cutting, etc.)
718 ..With shearing during delaminating
719 ..Delaminating from release surface

345.1 **DIFFERENTIAL FLUID ETCHING APPARATUS**

345.11 ..For liquid etchant
345.12 ..With mechanical polishing (i.e., CMP-chemical mechanical polishing)
345.13 ..With measuring, sensing, detection or process control means
345.14 ..With wafer retaining ring
345.15 ..With measuring, sensing, detection or process control means
345.16 ..With endpoint detection means
345.17 ..Liquid etchant spray means
345.18 ..With means to supply, remove, or recycle liquid etchant outside of etching tank or chamber (e.g., supply tanks or pipe network)
345.19 ..With mechanical mask or shield or shutter for shielding workpiece
345.2 ..Running length workpiece (e.g., etching indeterminate length strip)
345.21 ..Liquid etchant spray type
345.22 ..With plural etching zones for a single discrete workpiece in apparatus
345.23 ..With specified workpiece support
345.24 ..With measuring, sensing, detection or process control means
345.25 ..For endpoint detection
345.26 ..For detection or control of pressure or flow of etchant gas
345.27 ..For temperature detection or control
345.28 ..For detection or control of electrical parameter (e.g., current, voltage, resistance, power, etc.)
CLASS 156 ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE

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 plasma generation means remote from processing chamber

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 gas 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 .PLASTER BOARD MAKING APPARATUS

347 .With surface deformation means

348 .With edge treatment means

349 .SURFACE BONDING MEANS AND/OR ASSEMBLY MEANS THEREFOR

350 .Automatic and/or material-triggered control

351 ..Plural interrelated sensing means

352 ..To stop operation of complete machine

353 ..Of cutter

354 ..And separate means feeding cut pieces in sequence and applying to serially conveyed articles

355 ..Responsive to feed of article to which cut piece is applied

356 ..Of application of fluent material to work

357 ..By presence or absence of work to which applied

358 ..Of application of bonding pressure

359 ..Of temperature and/or motion of heat exchange means

360 ..Means responsive to weight or dimension

361 ..Of feed or motion of indefinite length work or transfer carrying tape

362 ..Of feed of articles to assembly station

363 ..Responsive to presence, absence, or condition of article to which applied

364 ..Sheet feeding

365 ..With safety interlocks

366 ..With timing means

367 ..With electrical controls

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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) 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 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

..With bending, folding, winding, or wrapping means

..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

......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
469  ...Transverse withdrawal of shaping or shape-retaining elements
470  ...And means applying separate web to shaped web
471  ...While still on shape-retaining means
472  ......Fluted roll-shape retainer
473  ......Separate means holding web in flutes
474  ...Pleating means
475  ...To configuration of part to which secured
476  ...Plural discrete bending means, each acting on separate article
477.1 ...Plural, distinct, sequential bending or folding means
478  ....Intersecting bend axis
479  .....Means bending sheet over edges of planar part
480  ......With separate member pressing bent sheet corner at axis intersection
481  ....Arcuate bending
482  ....Having intersecting axes of force
483  ...Flexible sheet across through passage for work
484  ....Sheet applied to passage
485  .....With additional separate smoothing means
486  ...Member travels along configured part
487  ....Flexible bristle wiping surface
488  ....Bodily deformable pad type
489  ....Opposed movable biased members
490  .....Positively actuated to intermittently defeat bias
491  ......Cam defeats bias
492  ...By swinging folding member approaching part
493  ...Deformable pad
494  .With stretching or tensioning means
495  ..By driven web feeding means
496  ...To transversely stretch or tension the web
497  .With gas, vapor, or flame contact means for work
498  .With work cooling means
499  .With separate (nonpress) heating means for work
500  .With casting, plastic molding, or extruding means
501  ..With means generating at least one self-sustaining web (e.g., film casting)
502  .Means joining flexible indefinite length or endless bodies end-to-end (e.g., film, tape, belt splicers)
503  ..Tube splicing type (e.g., inner tube)
504  ...Moving web (flying splice or with web accumulating means)
505  ..Means applying adhesive tape to joint only
506  ...With severing means for tape before application
507  ...Longitudinally moving web support moving web ends into association
508  ...With scraper or adhesive applying means
509  ..With scraper or adhesive applying means
510  .With cutting, punching, piercing, severing, or tearing
511  ..Plural severing means each acting on a different work piece
512  ..Severing followed by associating with part from same source
513  ..Means making hole or aperture in part to be laminated
514  ...And securing separate part over hole or aperture
515  ..Cutting element simultaneously bonds (e.g., cut seaming)
516  ..Means feeding plural workpieces to be joined
517  ...Severing before bonding or assembling of parts
518  ....Severing means or member secured thereto also bonds
519  ....Delivering cut part to indefinite or running length web
520  .....Cutter also delivers cut piece
521  ....Delivering cut part in sequence to serially conveyed articles
522  ...Cutting indefinite length web after assembly with discrete article
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
570 ...Stacked sheet source
571 ...Rotary or pivoted picker
572 ...Translating picker
573 ...Magazine stack directly contacting work
574 ...Work traversing type and/or means applying work to wall or static structure
575 ...With liquid applying means
576 ...Grip or clamp for web end
577 ...Implement carried web supply
578 ...With liquid adhesive or adhesive activator applying means
579 ...With handle or handgrip
580 ...Presses or press platen structures, per se
580.1 ...With sonic or ultrasonic means
580.2 ...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

DELAMINATING MEANS
750 .Delaminating means responsive to feed or shape at delamination
751 .Heating or cooling delaminating means (e.g., melting means, freezing means, etc.)
752 .Electromagnetic radiation delaminating means (e.g., microwave, UV, IR, etc.)
753 .Vibrating delaminating means
754 .Differential fluid pressure delaminating means
755 .Spraying delaminating means (e.g., atomizer, etc.)
756 ...Air blasting delaminating means
757 ...Vacuum delaminating means (e.g., vacuum chamber, etc.)
758 .Roller pair delaminating means
759 .Severing delaminating means (e.g., chisel, etc.)
760 ...Cutting delaminating means
761 ...Shearing delaminating means
762 ...Delaminating bending means
763 ...Poking delaminating means
764 ...Corner edge bending delaminating means
765 ...Means for delaminating from release surface

MISCELLANEOUS

CROSS-REFERENCE ART COLLECTIONS

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...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.)

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.)

FOR 101 DELAMINATING APPARATUS (156/584)

DIGESTS

DIG 1 LABELLING FLAT, ESSENTIALLY RIGID SURFACES (1/100)

DIG 2 .Affixing labels to one flat surface of articles; e.g., of packages, of flat bands (1/02)

DIG 3 .Affixing labels; e.g., wrap-around labels, to two or more flat surfaces of a polyhedral article (1/04)

DIG 4 ..Of a box; e.g., cigarette box (1/06)

DIG 5 LABELLING OTHER THAN FLAT SURFACES (3/00)

DIG 6 .Affixing labels to elongated objects; e.g., wires, cables, bars, tubes, (3/02)

DIG 7 ..Applying bands or labels to cigars or cigarettes (3/04)

DIG 8 .Affixing labels to short rigid containers (3/06)

DIG 9 ..To container bodies (3/08)

DIG 10 ...The container being positioned for labelling with its centerline horizontal (3/10)

DIG 11 ....By rolling the labels onto cylindrical containers; e.g., bottles (3/12)

DIG 12 ...The container being positioned for labelling with its centerline vertical (3/14)

DIG 13 ....By rolling the labels onto cylindrical containers; e.g., bottles (3/16)

DIG 14 ..To container necks (3/18)

DIG 15 ..To bottle closures (3/20)

DIG 16 ...Affixing metal foil coverings (3/22)

DIG 17 ...Affixing labels indicating original state of bottle snap or screw closure (3/24)

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)
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)