

1	<b>SPRING WHEELS</b>	53	..Pneumatic spring
2	..With lubrication	54	...Link connected
3	..Spring enclosure	55	...Cylinder and piston
4	..Cylinder and piston	56	...Annular
5	..Deformable ground engaging part	57	....Rigid annulus enclosing
6	..With plural spring types	58	....Plural
7	..With rubber spring	59	....With separate annulus guide
8	..With pneumatic spring	60	.....Combined drive
9	...Annular	61	.....Spring
10	....With air tanks	62	.....Links
11	..With leaf spring	63	.....Radial
12	..End secured	64	.....Studs or lugs
13	..With coil spring	65	.....Through bolts
14	...Radial	66	.....Anti-creep
15	....Cylinder and piston supported	67	....With drive
16	....Encircled rod supported	68	....Anti-creep
17	..Spring encircling rigid annulus	69	..Leaf spring
18	..With nonresilient overload stop	70	..With braces
19	..Convertible to rigid wheel	71	..Link connected
20	..With flexible annular support	72	..Variously arranged
21	..Lateral thrust or tension	73	..Cylindrical units
22	...Combined spring and friction	74	..Transverse
23	....Coil springs	75	..Straight, radial or tangential
24	.....Double thrust	76	..Center secured
25	...With coil springs	77	...With separate annulus guide
26	....Rod encircling	78	.....Combined drive
27	...With balls	79	...Reversely curved
28	..Combined spring and friction	80	...End secured
29	..With plural spring types	81	....Single end
30	...Rubber and pneumatic	82	....With separate annulus guide
31	...Rubber and leaf	83	.....Combined drive
32	...Rubber and coil	84	....Oppositely curved pairs
33	....Annular rubber	85	...Reversely curved springs
34	...Pneumatic and leaf	86	...Arcuate
35	...Pneumatic and coil	87	..Coil spring
36	....Annular pneumatic	88	...Link connected
37	...Leaf and coil	89	...Variously arranged
38	....Center secured leaf	90	....Tangential and radial
39	....End secured leaf	91	...Diagonal
40	..Rubber spring	92	...Circumferential
41	...In shear	93	...Tangential
42	...Cylindrical	94	...Transverse
43	....Transverse	95	....Center secured
44	...Blocks or balls	96	....Concentric with wheel axis
45	....With drive	97	...Radial
46	.....With separate annulus guide	98	....Tandem, interposed bearing
47	...Annular	99	....Telescoping cylinder supported
48	....Rigid annulus enclosing	100	....Cylinder and piston supported
49	....Plural	101	....With separate drive
50	....With separate annulus guide	102	.....Double acting
51	.....Combined drive	103	....Encircled rod supported
52	....With drive		

104	.....With independent annulus guide and drive	188	....Inlaid tread
105	....With separate annulus guide	189	....With securing rings
106	.....Combined drive	190	...Sectional
107	.....Spring	191	....Tire secured
108	.....Links	192	..Single tube tires internal
109	.....Radial	193	...Metal
110	.....Studs or lugs	194	....Plates
111	.....Through bolts	195	..Inner tube construction
112	....With separate drive	196	..Casing construction
151	<b>TIRES, RESILIENT</b>	197	...Embedded
152	.Emergency	198	....Metal
152.1	.With electrical conducting means	199	.....Plates
153	.With cooling devices	200	....Annular
154	.With splash guards	201	....Linked mat
154.1	.With balancing feature	202	....Woven
154.2	.With wear indicating feature	203	..Interliners
155	.Cushion and pneumatic combined	204	...Cotton, fabric, or rubber
156	..Metallic spring cushion	205	...Metal
157	..Enclosed cushion	206	....Scale armor
158	...Internal buffers	207	....Annular
159	..Superimposed	208	..Anti-skid devices
160	...Plungers	209.1	..Tread
161	...Edge-secured cushion	209.2	...For controlling noise by varying design cycle (e.g., specified pitch ratio, pitch sequence, etc.)
162	...Guide flanges	209.3	...Having varying tread characteristic (e.g., groove depth, groove angle, etc.) other than design cycle
163	....Radial stops	209.4	...Containing randomly dispersed short fibers or anti-skid granules
164	....Bolts or studs	209.5	...Having tread sections (e.g., base-cap, etc.) containing different specified physio- chemical properties (e.g., hysteresis, modulus, hardness, etc.) or compositions
165	..Integral	209.6	....Including retread or precured tread section
166	..With removable inner tube	209.7	....Including foam section
	.Armored	209.8	...Having asymmetric tread pattern
167	..Anti-skid	209.9	...Characterized by different groove widths
168	...Radial filaments and laminations	209.11	...For sidewall-running tires (e.g., unicycle, motorcycle, bicycle, etc.)
169	...Secured into casing	209.12	...Containing lugs having or appearing to have net to gross ratios of less than 35 percent (e.g., farm equipment, tractor tire, etc.)
170	...Detachable		
171	....Linked mat		
172	.....Tire secured		
173	....With circumferential band		
174	.....Bound to felly		
175	.....Tire secured		
176	.....Inlaid tread		
177	.....With securing rings		
178	....Sectional		
179	.....Tire secured		
180	.....Wholly metallic		
181	.....Bound to felly		
182	.....Tire secured		
183	.....Corner-connected sections		
184	.....With securing rings		
185	..External		
185.1	..Track for single wheel		
186	...Bound to felly		
187	...Tire secured		

209.13	....Having circumferential rib at or crossing equatorial plane	223	..Combined cross chains and plates or bars
209.14	...Having tire tread profile defined by diverse radii of curvature	224	...Superimposed
209.15	...Characterized by shape of upper surface of tread element (e.g., block with upper convex surface, etc.)	225 R	..Plate or bar type
209.16	...Having specified tread shoulder structure	226	...With traction lugs
209.17	...Having isolated holes or suction cups	227	....Flanges
209.18	...Having groove or sipe with specified dimension or structure therewithin	228	.....Integral
209.19	....Protrusion from bottom and spaced from both walls (e.g., pebble ejector, etc.)	229	....Calks
209.21	....Protrusion from wall and spaced from the opposite wall	230	.....Integral
209.22	....Protrusion bridging between walls (e.g., tie bar, etc.)	225 C	...Clamps
209.23	....Both walls inclined in same direction	231	..Cross chain type
209.24	....Having angle of inclination of one wall different from that of opposite wall	232	...Independent sections
209.25	....Having grooves or sipes with different specified depths	233	....Securing devices
209.26	....Having circumferential groove width at least 10% per cent of tread width	234	.....Felly and spoke
209.27	....Having continuous circumferential narrow width groove (i.e., less than 5mm.)	235	.....Spoke clamped
209.28	...Having directional two dimensional pattern (e.g., "v" shaped, etc.)	236	.....Felly
210	...With embedded anti-skid elements	237	.....Bound to felly
211	....Flush with tread	238	.....Spoke
212	....Radial filaments and laminations	239	...Annular
213 R	..Applying and removing devices	240	....With side anti-skid elements
214	...Vehicle carried	241	....Securing devices
215	....Running board carried	242	.....Securing rings
216	....Wheel carried	243	..Modified links
213 A	...Annular securing means	244	....Solid
217	..Tighteners	245	....With protectors
218	...Radial	246	.Cushion
219	...Circumferential	247	..Metallic springs
220	..Plural tire	248	...Tubular
221	..Flexible straps or cords	249	....Integral
222	...With metal anti-skid	250	....Woven
		251	...Wheel encircling band
		252	....With supporting spring
		253	.....Leaf
		254	.....Circumferentially extending
		255	.....Center secured
		256	.....End secured
		257	.....Single end
		258	.....Transverse
		259	.....Enclosed
		260	.....Rim secured
		261	....Coil
		262	.....Radial
		263	.....Enclosed
		264	.....Annular guide flange
		265	.....Integral enclosure
		266	.....Arcuate interior surface
		267	....Enclosed
		268	....Integral enclosure
		269	....Arcuate interior surface
		270	...Leaf
		271	...Circumferentially extending
		272	....Center secured
		273	....End secured
		274	.....Single end

275	....Transverse	328	....Multiple
276	.....Embedded	329	.....Annular
277	.....Enclosed	450	.Pneumatic tire or inner tube
278	.....Rim secured	451	..Tire cord reinforcement materials, per se
279	.....Retaining ring secured	452	..Cordless tires (e.g., cast tires, etc.)
280	.....Rim secured	453	..Tire characterized by closed annular transverse cross section
281	.....Rim flange engagement	454	..Tire characterized by the dimension or profile of the cross sectional shape
282	.....Radial securing means	455	..Asymmetric tire
283	.....Retaining ring secured	456	...Asymmetry due to cross sectional profile
284	...Coil	457	..Tire foldable in storage or nonuse condition (e.g., collapsible space-saving tire, etc.)
285	...Circumferential	458	..Tire reinforcement material characterized by short length fibers or the like
286	.....Embedded	331.1	..Multiple chamber
287	.....Enclosed	332.1	...Cylinder and piston
288	.....Arcuate interior surface	333.1	...Transverse walls
289	...Radial	334.1	....Mutually free walls
290	.....Sectional tire units	335.1	.....Interfitting
291	.....With plungers	336.1	.....Balls
292	.....With plungers	337.1	....With simultaneous inflating means
293	.....Enclosed	338.1	...With simultaneous inflating means
294	.....Annular guide flange	339.1	...Annular chambers
295	.....Sectional tread	340.1	....Mutually free walls
296	.....Integral enclosure	341.1	....With simultaneous inflating means
297	.....With nonmetallic band	342.1	...With simultaneous inflating means
298	.....Arcuate interior surface	343.1	..Sectional casings
299	.....With nonmetallic band	344.1	..Circumferential
300	..Sectional	345.1	...Rigid inner sections
301	..Annular	500	..With means restricting relative movement between tire and inner tube (e.g., anti-creep feature, etc.)
302	...Superimposed	501	..With means to protect inner tube from rim
303	...Superimposed	502	..Automatic sealing of punctures (e.g., self-healing, etc.)
304	..With apertured external binders	503	...Using flowable coating or composition
305	...Radial bolt secured	504	...On inner surface of tubeless tire
306	..Abutting sections		
307	...With annular internal binders		
308	....Interfitting		
309	....Indented at joints		
310	..Casing enclosed core		
311	...Separate core		
312	....Removable		
313	.....Sponge rubber		
314	.....With core compression		
315	.....Superimposed rings		
316	.....Sectional transversely		
317	.....Balls		
318	.....Integral structure		
319	.....Recessed		
320	.....Chambered		
321	.....Perforated		
322	.....Chambered		
323	..Integral		
324	...With recesses		
325	...Chambered		
326	...With perforations		
327	...Chambered		

- |     |   |     |  |
|-----|---|-----|--|
| 505 | .....Sealant in plural layers or plural pockets   | 529 | ....Utilizing two or more cord materials   |
| 506 | ...Within or part of construction of inflating inner tube                                     | 530 | ...Consisting of only one ply  |
| 507 | .....Sealant in plural layers or plural pockets   | 531 | ...Utilizing at least one ply the cords of which run circumferentially (zero degree belt)  |
| 508 | ...By compression   | 532 | ...With cushioning or other special rubber ply layer   |
| 509 | ...With reinflating means   | 533 | ...Reinforcing plies made up from wound narrow ribbons   |
| 510 | ..Tire characterized by its air impervious liner or inner tube                                | 534 | ...Structure where each bias angle reinforcing cord ply has no opposingly angled ply   |
| 511 | ...Inner tube   | 535 | ...Structure made up of two or more sets of plies wherein the reinforcing cords in one set lie in a different angular position relative to those in other sets |
| 512 | ...With reinforcement element   | 536 | ...Structure using multiple reinforcing elements made of differing materials   |
| 513 | ..With means to protect tire from rim   | 537 | ...Breaker or belt characterized by the chemical composition or physical properties of elastomer or the like   |
| 514 | ..Means other than rim closing the tire opening   | 538 | ...Breaker or belt characterized by its dimensions or curvature relative to the carcass or any other part of the tire  |
| 515 | ...Positive casing closure  | 539 | ..Characterized by the structure of the bead portion of the tire   |
| 516 | ..With means enabling restricted operation in damaged or deflated condition                   | 540 | ...Structure of inextensible reinforcing member  |
| 517 | ...With sidewall insert to facilitate load support in emergency                               | 541 | ...Apex or filler strip  |
| 518 | ..Utilizing additional inflatable supports which become load bearing in emergency             | 542 | ...Flipper strips  |
| 519 | ....Inflated or expanded in emergency only  | 543 | ...Chafer or sealing strips  |
| 520 | ..Utilizing additional noninflatable supports which become load supporting in emergency       | 544 | ...Bead contour for engagement with mounting rims (e.g., lips, ribs, or grooves, etc.)   |
| 521 | ...Internal lubricating or cooling  | 545 | ...Multiple bead cores at each terminal edge or tire supporting surface  |
| 522 | ...Means facilitating folding between sidewall portions (e.g., run flat sidewalls, etc.)      | 546 | ...Bead characterized by the radial extent of apex, flipper or chafer into tire sidewall   |
| 523 | ..Arrangement of grooves or ribs in sidewall  | 547 | ...Bead characterized by the chemical composition and or physical properties of elastomers or the like   |
| 524 | ..Having annular inlay or cover on sidewalls (e.g., white sidewalls, etc.)                    | 548 | ..Characterized by the carcass, carcass material, or physical arrangement of the carcass materials   |
| 525 | ..Characterized by chemical composition or physical properties of external sidewall materials |     |  |
| 526 | ..Characterized by belt or breaker structure  |     |  |
| 527 | ...Physical structure of reinforcing cords  |     |  |
| 528 | ...Folded ply structure   |     |  |

549	...Cushion means inward of outermost carcass ply	369	...Inside and outside, bolt connected
550	...Carcass ply extends from at least one bead region without being folded about bead rings	370	..With plugs
551	...Carcass ply only folded about one bead ring	371	..Bandages
552	...Carcass ply turnup structure around bead rings	372	...Mechanically secured
553	...Folded from outside to inside of bead core	373	....To felly or rim
554	...Characterized by the extent of the fold up into the sidewall of the tire relative to the other tire dimensions	375	.Wheel securing means
555	...Sidewall stiffening or reinforcing means other than main carcass plies or foldups thereof about beads	376	..Plural tire
556	...Physical structure of reinforcing cords	377	..Retracting wheel section
557	..With two or more differing cord materials	378 R	..Integral rims
558	...Carcass characterized by the reinforcing cords of each carcass ply being arranged substantially parallel	379.3	...Interlocking tire and rim
559	...Reinforcing cords run in opposite directions in successive carcass ply (i.e., bias plies)	379.4	...With elongate bead guard
560	...Reinforcing cords of at least one carcass ply extend transversely across the tire from bead to bead (i.e., radial ply)	379.5	...Bead and rim interlock
561	....Combined with a bias angled ply	380	...Tire embraced rim
562	...Cords curve from bead to bead in plural planes (e.g., S-shaped cord paths, etc.)	381.3	...Deep channel rim
563	...Reinforcing cord of a carcass ply arranged in a crossing relationship within the ply (e.g., woven, braided or knitted plies, etc.)	381.4	....With elongate circumferential bead guard
564	...Carcass characterized by the chemical composition or physical properties of the elastomers or the like	381.5	....With channel cover
565	..Adhesion promoter: rubber to rubber or reinforcement to rubber	381.6	....With channel filler
367	.Patches	382	...Clincher rim
368	..Mechanically secured	383	....Pneumatic tire
		384	..With anti-creep lugs
		378 W	..Rim welded to disc
		385	..Axial
		386	..Radial
		387	...With circumferential tire incorporated clamps
		388	..With annular tire incorporated clamps
		389	...With mechanically joined ends
		390	....Adjustable
		391	....Pneumatic tire
		392	...Adjustable
		393	..Reinforced tire base structure
		394	...Metallic external base ring
		395	...With annular exterior clamps
		396	..Separable rim parts
		397	...Exterior clamps
		398	....Lateral acting
		399	...Interior clamps
		400	....Spreaders
		401	....Combined sectional channel
		402	...Sectional channel
		403	....Duplicate sections
		404	....Pneumatic tire
		405	....Pneumatic tire
		406	....Split side flange
		407	....End connected
		408	....With rim engaging end lugs
		409	....Locking rim secured
		410	....Split locking ring
		411	....Overlapping section
		412	....Bayonet or threaded joint
		413	....Bayonet or threaded joints

414 .....Hinged section  
 415 ..Inflating devices  
 416 ..Vehicle body carried supply  
 417 ...Rotary joints  
 418 ..Wheel carried supply  
 419 ...With positive pump operating  
       means  
 420 ....Gearing  
 421 ....Cam  
 422 .....Eccentric bearing  
 423 ....Obstacle  
 424 .....Ground  
 425 .....Casing interposed  
 426 .....Casing enclosed pump  
 427 ..Combined wheel and valve stem  
 428 ...With dust cap  
 429 ..Combined tire and valve stem  
 430 ...Reinforcements or patches  
 431 ..Combined valve stem cap and  
       tool

**DIGESTS**

DIG 1    **PEBBLE EJECTORS**  
 DIG 2    **STATIC DISCHARGE**  
 DIG 3    **SLITS IN THREADS**  
 DIG 4    **CRACK RESISTANT**  
 DIG 5    **WATER FILLED**  
 DIG 6    **PEG LEG**  
 DIG 7    **RUBBER VALVES**  
 DIG 8    **CLAMPS**  
 DIG 9    **BEAD TO RIM SEAL**  
 DIG 10   **SPLIT RIM SEAL**  
 DIG 11   **TUBELESS VALVES**  
 DIG 12   **WHITE SIDEWALLS**  
 DIG 13   **VALVES STEM GUARDS**  
 DIG 14   **FABRICS**  
 DIG 15   **OVERLAP**  
 DIG 16   **AIR IMPERMEABLE LINER**  
 DIG 17   **GROOVED RIM**  
 DIG 18   **HUB TIRES**  
 DIG 19   **SANDWICH BREAKERS**  
 DIG 20   **RIMS FOR INVERTED BEAD TIRES**

**CROSS-REFERENCE ART COLLECTIONS**

900       **TREAD PATTERN HAVING NO BLOCKS  
           AND HAVING CIRCUMFERENTIAL  
           RIBS DEFINED BY ZIG-ZAG  
           CIRCUMFERENTIAL GROOVES**  
 901       **TREAD PATTERN HAVING NO BLOCKS  
           AND HAVING CIRCUMFERENTIAL  
           RIBS DEFINED BY LINEAR  
           CIRCUMFERENTIAL GROOVES HAVING  
           STRAIGHT EDGES**  
 902       **NON-DIRECTIONAL TREAD PATTERN  
           HAVING NO CIRCUMFERENTIAL RIB  
           AND HAVING BLOCKS DEFINED BY  
           CIRCUMFERENTIAL GROOVES AND  
           TRANSVERSE GROOVES**  
 903       **NON-DIRECTIONAL TREAD PATTERN  
           HAVING NON-CIRCUMFERENTIAL  
           TRANSVERSE GROOVE FOLLOWING  
           SMOOTH CURVED PATH**  
 904       **SPECIFIED TREAD PATTERN FOR FRONT  
           TIRE AND REAR TIRE**  
 905       **TREAD COMPOSITION**

**FOREIGN ART COLLECTIONS**

FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**

