

1.11 R	WITH CONDITION INDICATOR	26	..Hub or disk
1.11 W	..Wear	27	..Pivoted wheel
1.11 L	..Electrical	28	.Clasp
1.11 E	..Electrical	29	.Top shoes
1.12	TO RETARD ROLLING OF CASTER	30	.One-way
2 R	VEHICLE	31	.Positive lock
3 R	..Train	32	.On ground
3 H	..Fluid pressure vehicle	33	.Railway
4 R	..Wheel and ground	34	..Train
4 B	..Rotary brake member	35	..Wheel and rail
5	..Ground-engaging	36	...Chock
6	..Sprag	37	....Roller shoe
7	..Anchors	38	..Track
8	..Sled	38.5	...Plural abutments selectively engageable by vehicle-carried means, e.g., car spotter
9	..Wagon		
10	..Four-wheel		
11	..Divided beam	39	...Rotary shoe
12	..Running gear support	40	...Slot
13	...Divided beam	41	..Rail
14	..Hayrack type	42	...Carrier type
15	..Retreating shoe	43	...Grippers
16	..Independent wheel	44	....Automatic
17	..Hub or disk	45	....Wheel clamps
18 R	..Motor vehicle	46	..Equalizing series
18 A	...Disc brakes	47	..Connected trucks
19	..Cart	48	..Maximum traction type
20	..Children's carriages	49	..Four wheel opposing
21	..Truck	50	...Open center
22	..Two-wheel	51	...Divided beam
23	...Ground-engaging	52	..Four wheel spreading
24.11	..Velocipede (e.g., bicycle, etc.)	53	...Divided beam
24.12	..Including mechanism for opposed gripping of wheel rim or tire	54	....Locomotive type
24.13	...Wheel rim configured to cooperate with components	55	....Mine car type
24.14	...Having means to increase braking force (e.g., self-energizing brake, etc.)	56	..Clasp
24.15	....Variable leverage actuator	57	..Top shoes
24.16	....Plural brakes having common actuator	58	..Disk on axle
24.17	..Actuation controlled by back-peddalling	59	...Side shoes
24.18	...With means to lock brake in actuated position	60	..Positive lock
24.19	...Having means to adjust spacing between brake component and wheel rim or tire	61	..One-way
24.21	...Having center-pull, cable-type actuator for mechanism	62	..On track
24.22	...Specific actuator element structure	63	...Catchers
25	..Roller	2 A	.Braking torque regulators
		2 D	.Bowdin wire-operated
		2 F	.Wheelchair brakes
		64	WHEEL AND STRAND
		65.1	STRAND
		65.2	..With attaching means
		65.3	..Plural brakes
		65.4	..Tortuous grip
		65.5	..Adjustable
		67	ROD
			WHEEL
		68	..Frictional and positive

69	.Positive lock	73.43	...Including actuator slidable in plane parallel to axis of rotation of wheel
70 R	.Axially and transversely movable		
70 B	..Self-energizing		
71.1	.Axially movable brake element or housing therefor	73.44	....On axially extending pin
71.2	..With clutch between load and brake assemblage	73.45	.....Plural pins
71.3	..Antipodal, relatively separable brake elements	73.46	...Including actuator fixed on torque member
71.4	...Annular elements	73.47	...Having closed loop type housing
71.5	..Plural rotating elements (e.g., "multidisc")	74	.Transversely movable
71.6	..With means for cooling brake	75	..Opposing
71.7	..With means to adjust for wear of brake	76	...Rim grip
71.8	...Self-adjusting means	77 R	..Strap
71.9	....Including unidirectionally rotating screw	77 W	...Wrap band type
72.1	..With means for actuating brake element	78	..Expanding
72.2	...Self-force-increasing means	79	...Multiple sets
72.3	...And means for retracting brake element	323	...Three shoes
72.4	...By fluid pressure piston	324	...Rotary cam operatively abutting shoe ends
72.5	....Piston for each of plural elements	325	...Two shoes
72.6	....And/or mechanical linkage	326	...Operators at both ends of each shoe
72.7	...By inclined surface (e.g., wedge, cam or screw)	327	...Anchors adjacent unoperated ends
72.8	....Screw or helical cam	328	....Common anchor pivot or abutment
72.9	...By pivoted lever	329	.....Rotary cam abutting shoe ends
73.1	..Structure of brake element	330	....Rotary cam abutting shoe ends
73.2	...Circumferential or circumferentially spaced	331	...Adjacent ends operatively connected and not anchored to support
73.31	..Retainer for brake element	332	....Rotary cam abutting shoe ends
73.32	...Having means to facilitate changing brake element	333	....One end anchored
73.33	....By manipulation of brake actuator	334	...Anchors at alternate ends
73.34	....Pivotable actuator	335	...Radially guided shoe
73.35	...Having actuator and means to prevent vibration thereof	336	...Continuous split band
73.36	....Including means to prevent vibration of brake element	337	...Anchored intermediate ends
73.37	...Having means to prevent vibration of brake element	338	....Rotary cam operatively abutting band ends
73.38	....Spring	339	...Rotary cam operatively abutting band ends
73.39	...Including torque member supporting brake element	340	...Lateral guide for shoe
73.41	...Including actuator pivotable in plane parallel to axis of rotation of wheel	341	...Anchor
73.42	....And slidable in that plane	342	...Self-energizing
		343	...Wedge operator
		79.51	..Having wear take up or compensating structure
		79.52	...Temperature responsive
		79.53	...Feeler actuated

79.54	...Actuated in conjunction with other braking element	266	INTERNAL-RESISTANCE MOTION RETARDER
79.55	...Actuated by brake operating lever	267	.Using magnetic flux
79.56	...Having separate adjustment actuator mechanism	267.1	.Electroviscous or electrorheological fluid
79.57	...Manually operated	267.2	.Magnetic fluid or material (e.g., powder)
79.58	....Brake operator length adjusted	266.1	.Motion damped from condition (e.g., bump, speed change) detected outside of retarder
79.59	....Mounted between shoe and a support member	266.2	..Condition actuates valve or regulator
79.61	.....Causes direct, simultaneous adjustment of plural shoes	266.3	...Of the rotary type
79.62	...Located on or in an operator	266.4	....Having plural openings
79.63	...Mounted between shoe and a support member	266.5	...Of the pulsating or reciprocating type
79.64	....Between plural supporting shoes	266.6	....Side mounted
80	.Rotary shoes	266.7	.Piezoelectric
82.1	.One-way brakes	266.8	.With failure or malfunction detection
82.2	..Reversible	268	.Using yieldable or fluent solid or semisolid
82.3	..With disabler	269	.Using diverse fluids
82.34	...Integral with engager	270	.Operating against ambient atmosphere
82.4	..With hold out	271	.Combined with surface-friction brake
82.5	..Combined or plural diverse types	272	.Combined with mechanism retarded by brake
82.6	..Biased flexible band	273	..Restricting exhaust from engine
82.7	..Pivoting or flexing detent (e.g., pawl)	274	.With heat exchanger
82.74	...Axially moving	275	.With fluid regulated in response to inertia of valve member
82.77	...On rotating member	276	.With means compensating for change in temperature or viscosity
82.8	..Dragged wedging member	277	..Thermostatic valve type
82.84	...Rolling	278	...Manually adjustable
82.9	..Axially moving	280	.Relative speed of thrust member or fluid flow
83	.Continuous	281	.Resistance alters relative to direction of thrust member (e.g., high resistance in one direction, low in the other)
84	.Fixed brake	282.1	..Via valved orifice in thrust member
85	.Intermittent	282.2	...Valve actuated by electrical system
371	PLASTIC DEFORMATION OR BREAKAGE OF RETARDER ELEMENT (E.G., IMPACT ABSORBER)	282.3	....System initiated by a pressure change or feedback
372	.And subsequent reverse deformation	282.4	....System having distinct selections (e.g., hard, medium, soft)
373	.Element twisted	282.5	...Flexible flap-type valve (e.g., compression washers)
374	.Element extruded through or around tool		
375	.Element severed by cutting tool		
376	.Frangible element		
377	.Crushable element		
378	INERTIA OF DAMPING MASS DISSIPATES MOTION (E.G., VIBRATION DAMPER)		
379	.Resiliently supported damping mass		
380	..Supported by mechanical spring		

- 282.6 ...Having flow passage, cutout, aperture, slot, etc.
- 282.7 ..Ball-type valve
- 282.8 ...Spring-loaded valve
- 282.9 ...Adjusting the tension via (a) compressing or expanding or (b) different strength springs
- 283 .Piston having a restrictable opening (e.g., apertured plate) in a fixed volume chamber
- 283.1 ..Vortex flow passages
- 284 ..Position of thrust member relative to chamber
- 285 ..Having a fluid flow passage adjusted manually (e.g., threaded plug, threaded rod, gearing)
- 286 ..Having aperture in chamber wall
- 287 ...Plural, successively encountered apertures
- 288 ..Having varying area of chamber passageway for thrust member
- 289 ..Having varying area of metering rod extending through orifice in thrust member
- 290 ..Using a rotary-type fluid damper
- 291 ..Including clutch
- 292 ..Gear pump
- 293 ..Driving relatively moving element which causes flow of brake fluid
- 294 ..With means for regulating movement of element
- 295 ...Comprising rectilinearly reciprocating piston
- 296 ..Driving radial vanes which cause toroidal flow of brake fluid
- 297 .Having a thrust member with a variable volume chamber (e.g., coaxial or telescoping tubes, compensating reservoir)
- 298 ..Forming flexible wall enclosure for fluid
- 301 ..Causing air suction in chamber
- 302 ..Rectilinear reciprocation of piston caused by arcuately oscillating frame, shaft, arm, axle, etc.
- 303 ...Pistons reciprocating oppositely in nonaligned cylinders
- 304 ...Dual pistons
- 305 ...Piston reciprocating along axis of oscillation
- 306 ..Arcuately oscillating thrust member
- 307 ...Resilient or radially urged vane
- 308 ...Causing fluid flow through hub of thrust
- 309 ...With manually adjusted valve in hub
- 310 ...With means for manually adjusting fluid flow
- 312 ..Having piston rod extending through ends of chamber
- 313 ..With valve controlling fluid flow between chambers or compartments of the chamber
- 314 ...With reservoir for fluid
- 315 ...Annular reservoir
- 316 ..Fluid through or around piston within chamber
- 317 ...Via fixed or variable orifice in piston
- 318 ...And passage venting fluid external to chamber
- 319.1 ...Having an orifice adjustment for both jounce or bound (compression) and rebound
- 319.2 ...Orifice size varied using a hand or hand tool
- 320 ...Tortuous path orifice
- 322.13 .Valve structure or location
- 322.14 ..Foot valve
- 322.15 ..Piston valve detail (e.g., seat design, structural arrangement, metering element)
- 322.16 .Including seal or guide
- 322.17 ..Between piston rod and cylinder
- 322.18 ..Between piston and cylinder
- 322.19 .Cylinder structure
- 322.2 ..Having connection for side-mounted valve type
- 322.21 ..Having means for filling or recharging
- 322.22 .Thrust member or piston structure
- 322.12 .Including protective shield for retarder
- 321.11 .Including means connecting thrust member to load
- 299.1 .Controlled by an operator (e.g., vehicle driver) remote from retarder
- 300 .With means for locking parts together temporarily

322.5	.Using viscosity of fluid medium	149	.....Drawbar
381	FRictional VIBRATION DAMPER	150	.....Speed-responsive
	OPERATORS	140 A	....Servo brake
105	.Multiple	151 R	.Fluid pressure
106 R	..Vehicle	152	..Road vehicle
107	...Railway	344	...Velocipede
106 F	...Fluid and mechanical	345	...With multiple master cylinders
106 A	...Inside wheel	346	...With friction drag response
106 P	...Plural systems	347	...With hydraulic quick-slack- take-up pulsator
108	.Vehicle step	348	...With power quick-slack-take-up
109	.Seat	349	...With front rear brake apportioner
110	.Automatic		
	..Vehicle		
111	...Trips	350	...With steering gear control
112 R	...Train	351	...With hydraulic automatic slack adjuster
112 A	....Anti-sway control		
113	...Four-wheel	352	...With bleeding or filling device
114	...Hub		
	...Auxiliary mechanism on tongue	353	...With hydraulic lock
115	....Rear wheel	354	...With independent wheel control
116	.....Divided beam	355	...With nonmanual fluid-power source
117	....Front wheel		
118	.....Divided beam	356	....Vacuum power
	...Movable tongue	357	.....And manual
119	...Rising and falling	358	....Liquid power
120	....Rear wheel	359	.....And manual
121	.....Divided beam	360	....And manual
122	....Front wheel	361	...Wheel brake operating assembly
123	.....Divided beam	362	...With transversely movable internal brake
	...Railway		
124	....Train	363	.....Motor between shoe ends
125	.....Drawbar	364	.....Dual opposed piston motor
126	.....Speed-responsive	365	....Radially acting motor
127	....Strain release	366	....Arcuate or annular motor
128	...Sled	367	.....Axially acting
129	...Rise and fall	368	....Axially acting motor
130	....Rotary	369	...With axially movable brake member
131	...Turning		
132	...Horse pull	370	.....Spot type
134	..Differential movement	153 R	..Rail vehicle
135	.Momentum	153 D	...Diaphragm
136	...Wedging shoe	153 A	...Rim grip type
137	...Electric control	154	..Exhaust of propelling motor
138	....Vehicle	151 A	..Safety devices
139	...Gravity control	155	.Fluid current
140 R	...Vehicle	156	.Electric and mechanical
141	....Fluid-pressure control	157	..Electric motor on staff
142	....Draft control	158	.Electric
143	....Wheel and ground	159	..Dynamic
144	....Railway	160	...Additional current
145	.....Winding	161	..Electromagnet
146	.....Axle	162	...Rotary motor
147	.....Train	163	...Solenoid
148	.....Push rod	164	...Magnetic circuit

165	....Rail-engaging	206 R	..Brake element
166	.Spring	207	...Beam
167	..Vehicle	208	....Road vehicle
168	...Draft release	209	....Brackets
169	....Wagon	210	....Safety
170	..Fluid-pressure release	211	....Locks
171	..Electric release	212	....Parallel motion
173	...Vehicle	213	.....Multiple-point support
174	.Weight	214	....Wear compensation
175	..Draft control	215	.....Brake shoes
176	..Vehicle body	206 A	...Anchor
177	...Inclined	205 A	..Antirattler
178	...Longitudinally movable	216	.Release mechanism
179	..Float	217	.Brake-thrust distributors
	.Speed-responsive		ELEMENTS
180	..Regulators	218 R	.Brake wheels
181 R	...Vehicle	218 XL	..Disk type
181 A	....Acceleration responsive	218 A	..Dust guard
181 C	....Comparative	219.1	.Beams or beam assemblies
181 T	....Torque-responsive	219.6	..With movable, reversible or adjustable heads
182	...Fluid and electric control	220.1	...Pivoted head
184	...Transversely expanding	220.6	....Lockingly adjustable
185	....Radial	221.1	.....Yieldably readjustable
186	...Transversely contracting	222.1	..With fixed head or thrust block
187	...Axially moving	222.6	...Integral head and beam
188	...Strand-engaging	223.1	...Trussed beam
189	..Stops	223.6	....Head or block held by tension element
	POSITION ADJUSTERS	224.1	.....Tension adjusted by terminal nut
190	.Vehicle body movement	225.6	..Trussed beam
191	..Radius rod	226.1	...Integral tension and compression member
192	..Turning	228.1	...Tubular compression member
193	...Railway	228.6	...H, I, L, T, U, V, or X cross section compression member
194	...Pivoted wheel	229.1	...With strut-type fulcrum
195	.Load	229.6	....Reversible
196 R	.Slack	231	..With fulcrum
197	..Railway car	232	...Reversible
198	...Automatic	233	...Spaced
199	....Friction clutch	233.3	..With guides and/or guards
200	....Ratchet bar	233.7	..H, I, L, T, U, V, or X cross section beam
201	....Shims	234	.Shoe fasteners
202	....Screw	235	..Locomotive type
203	.....Fluid-operated	236	..Heads
196 A	..Fluid	237	..Combined wheel guards
196 C	..Combined	238	..Multiple shoes
196 F	..Torsional spring	239	...Superposed
196 M	..Manual	240	...Linear arrangement
196 P	..Friction	241	....Frangible connection
196 B	..Ratchet	242	..Interlocking heads and shoes
196 BA	...Rotatable		
196 D	..Frictional rotation		
196 V	..Screw, shim or cam		
204 R	.Equalizers		
204 A	..For strap brakes		
205 R	.Supports		

243 ...Longitudinal key
 244 ...Longitudinal insertion
 245 ...Side insertion
 246 ...Clamps
 247 ..Shoe-back lugs
 248 ...Cast in
 249 ..Flexible shoes
 250 R ..Shoes
 251 R ..Composite
 252 ...Flanged
 253Recessed
 254 ...Shells
 255 ...Cast metal matrix
 256Nonmetallic inserts
 257Faces
 258Backs
 259 ...Flexible
 251 A ...Materials
 251 M ...Metallic surfaces
 260 ..Chills
 261 ..Recessed
 262 ..Rotary
 250 A ..Transversely expandable
 250 H ..One-piece
 250 C ..Multiple web
 250 D ..Web and flange connections
 250 E ..Slotted shoes and vibration dampers
 250 F ..Anchor and operator fittings
 250 G ..Surfaces and fasteners
 250 B ..Shoe construction
 264 R ..Cooling and lubricating
 264 A ..Air-cooled, axially engaging
 264 AA ...Auto wheel type
 264 B ..Lubrication
 264 D ..Liquid cool
 264 E ..Wet friction surface and internal resistance
 264 F ..Operating fluid cooling
 264 CC ..Contained coolant
 264 G ..Insulators
 264 P ..With pump
 264 W ..External wheel covers
 265 ..Locks
 382 **MISCELLANEOUS**

DIGESTS

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 DIG 2 **HILL HOLDER**
 DIG 3 **PROGRESSIVE BRAKING**

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