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| 2 | COMBINED WRENCHES AND PUMPS OR OILERS | 7 | .Jewel setters' |
| 3.05 | SHELL, PROJECTILE, OR WAD EXTRACTORS | 7.5 | .Mainspring winders |
| 3.07 | RECEPTACLE CLOSURE REMOVER | 8 | .Ruby pin setters |
| 3.08 | .Having discrete retainer or receptacle for removed closure | 8.1 | PACKING |
| 3.09 | .Combined or plural | 9.2 | STYLUS |
| 3.15 | ..Attached to receptacle or closure | 9.21 | STAMP SCARIFIER |
| 3.2 | .Power-, vacuum-, or fluid pressure-operated | 9.22 | PERFORATOR AND INKER |
| 3.25 | .Wall or surface mounted or supported | 9.24 | TAPPET ADJUSTER |
| 3.31 | ..With receptacle supporting or grasping means | 9.26 | PLOWSHARE HOLDER |
| 3.32 | ...With bottom support | 9.3 | HOSE-CLAMP APPLIERS |
| 3.33 | ..Rotary remover device, gear or lever actuated | 9.4 | WIRE STRIPPER |
| 3.27 | ..Lever or prying type | 9.51 | .Bench tools |
| 3.35 | .Movable into or over handle | 9.41 | .Having relatively movable clamp and blade |
| 3.36 | .With additional receptacle-engaging means | 9.42 | ..Clamp and blade move relative to supporting structure |
| 3.37 | ..Lever- or gear-translated closure remover | 9.43 | ..Blade moves relative to handle to remove insulation |
| 3.29 | ..For engaging receptacle about closure (e.g., socket type) | 9.44 | .Pivoted blade |
| 3.39 | ..Bottom support | 10 | NUT LOCK |
| 3.4 | .Gripping type | 13 | BOLT HOLDERS |
| 3.41 | ..Finger grapple type | 15.2 | REPAIR TOOLS FOR RESILIENT TIRES |
| 3.42 | ..With reciprocating closure-engaging | 15.3 | .Holders for spread tire casings |
| 3.43 | ..With deformable strip-tightening means | 15.4 | .Deflating tools |
| 3.44 | ..With pivoted closure-engaging parts | 15.5 | .Combined cement injectors and plug or patch inserters |
| 3.45 | .Screw type | 15.6 | .Cement injectors |
| 3.55 | .Levering or prying type | 15.7 | .Plug or patch inserters |
| 3.47 | ..With impaling or inserting remover | 15.8 | SKID CHAIN APPLYING TOOLS FOR LOCK OR LATCH |
| 3.56 | ..Having discrete relatively movable portions | 15.9 | CHUCK KEY |
| 3.57 | ..Having handle, intermediate hook, and end fulcrum | 16 | HOLDER, PUSHER, OR SETTER FOR DRIVEN-TYPE FASTENERS |
| 3.48 | .Impaling or inserting type | 44 | SHINGLE TOOL |
| 3.49 | ..With lateral projection or abutment | 45 | WOODEN FLOORING TOOL |
| 3.5 | SPECTACLE | 46 | TOOL JAW(S) POSITIONED BY RELATIVELY MOVABLE PLURAL HANDLES (E.G., PLIERS) |
| 3.6 | .Plier | 300 | .Including hydraulic features |
| 3.7 | LEAF-SPRING SPREADERS | 301 | .Antipodal jaw surfaces move apart as handles approach (e.g., outwardly expanding jaws) |
| 3.8 | FUSE PULLERS | 302 | .With three or more jaws |
| 4 | ENGRAVERS' CLAMPS | 303 | ..With single pair of handles |
| 6 | WATCHMAKERS' | 304 | ...Double pair Janus-jawed |
| | | 305 | ...With jaws fixed to handle(s) |
| | | 306 | ...With intermediate jaw(s) in line with and between outer jaws |
| | | 307 | ...With three jaws only |
| | | 308 | ...Two pivoted jaws and one sliding jaw |
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| 310 |Three coacting pivoted jaws | 344 | ...Predetermined and discrete member of leverage selections |
| 311 | ...With separate jaw pairs | 345 | ..Axial motion of handle-attached actuators(s) |
| 312 |Parallel jaws perpendicularly spaced | 346 | ..Pivotal motion about axis of parallel actuator rod(s) |
| 313 | ..With means requiring a completion of travel of jaw movement | 347 | ..With means to articulate and/or slide both jaws |
| 314 | ..With means for step-by-step jaw movement | 348 | ...With means for arcuate motion of both jaws |
| 315 | ..With means to immobilize handles against relative angular movement and means to move jaw(s) thereafter | 349 |Cam actuator |
| 316 | ..With plural selective handle positions | 350 |Dual pivoted actuator levers |
| 317 | ..With means for relative longitudinal handle movement | 351 |With jaws pivoted together |
| 318 | ..With means to immobilize jaws | 352 | ...With means for parallel movement of work-engaging surfaces |
| 319 | ..With lock-release means | 353 |Longitudinal guide means |
| 320 | ..With lock-disabling means | 354 |Lateral guide means |
| 321 | ..Including spring-urged handles or jaws | 355 | ..With means for sliding jaw actuation |
| 322 | ...And spring-urged latch | 356 | ...With adjustment means |
| 323 | ..Spring-urged latch element(s) | 357 |Pivoted pawl type |
| 324 | ..Positive lock means | 358 | ...Pinion and rack |
| 325 | ..With plural selective jaw positions | 359 | ...Claw lever and rack or notch |
| 326 |Threaded lock means | 360 |Plural teeth on claw |
| 327 |With threaded jaw adjustment means | 361 | ...Grip lever and cam |
| 328 |Interdigitated lock means | 362 | ...Grip lever and link |
| 329 | ..With means (nontoggle) to hold jaws against only retrograde movement | 363 |Toggle link |
| 330 | ..With plural preselective jaw positions | 364 | ..Including claw lever and rack or notch means |
| 331 | ..Manipulated lock member | 365 | ...With adjustment means |
| 332 | ...Pivoted bail | 366 | ...Plural teeth on claw |
| 333 | ...Sliding yoke | 367 | ..Including toggle means |
| 334 | ...Threaded member | 368 | ...With toggle release |
| 335 |Nut | 369 |By means acting on intermediate pivot |
| 336 | ...Pivoted rack | 370 |Release means carried by grip lever |
| 337 | ...Pivoted pawl | 371 |Mounted on intermediate pivot |
| 338 | ..Rack and pawl means | 372 | ...With means to limit movement of intermediate pivot |
| 339 | ..Coacting friction means | 373 | ...With means for relative parallel movement of jaws |
| 340 | ...Serrated surfaces | 374 | ...With pitman between grip lever and intermediate pivot |
| 341 | ..With means to vary range limit(s) of jaw movement | 375 | ...With toggle linkage and actuated jaw mounted on carrier |
| 342 | ..Jaw-actuating means (handle-manipulation conversion) | 376 | ...With connecting rod between grip lever and actuated jaw |
| 343 | ..With means to choose one of a plurality of actuator leverages | 377 | ...With connecting rod between grip lever and handle member |

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| 378 | ...With actuated jaw pivoted on handle member | 411 | ...With pivot pin fulcrum in notched slot |
| 379 |With means for resiliently biasing jaw and/or toggle | 412 | ...With flattened cross section pin |
| 380 |Extension coil spring between jaw and handle member | 413 | ...With toothed-member fulcrum on notched handle |
| 381 | ..Including grip lever actuator and pivoted jaw (e.g., tandem levers) | 414 | ...With opposed interdigitated concentric segmental annular portions |
| 382 | ..With adjustment means | 415 | .Crossed handles |
| 383 | ..With link connecting jaw and grip lever | 416 | ..Joint detail |
| 383.5 | ..Including cam actuator and pivoted jaw | 417 | ..Resiliently urged |
| 384 | ..With adjustment means | 418 | .Jaw features |
| 385 | ..Adjustable relationship between jaw(s) and/or handle(s) | 419 | ..Tined or digitated jaws |
| 386 | ..By relative positioning of jaw(s) only | 420 | ..Jaws extend laterally beyond side edge plane of handle(s) |
| 387 | ...Both jaws adjustable | 421 | ..Jaw attachment and/or inserts |
| 388 | ...By threaded elements | 422 | ...Selective |
| 389 |Rotatable screw type | 423 | ...By detachment |
| 390 |Rotatable nut type | 424 | ...Articulated |
| 391 | ..Maintained by detent and rack | 424.5 | ..Nonplanar jaw face |
| 392 | ..Maintained by locked interdigitated members | 426 | ...And diversely shaped face |
| 393 | ..By angular orientation of one handle portion relative to other | 426.5 | ...Work conforming face |
| 394 | ..By selection of pivot hole(s) in each handle | 427 | .Resiliently urged |
| 395 | ..By threaded adjustment means | 427.5 | .Handle |
| 396 | ...Worm and rack type | 463 | INCLUDING TOOL DRIVING BY IMPACT DELIVERING COMPONENT OR COOPERATING ANVIL |
| 397 | ...Peripherally threaded handle manipulated for travel relative to other handle | 464 | .Motor or gear driven |
| 398 | ...Threaded element travels relative to both handles | 465 | .Structurally constrained to arcuate movement |
| 399 | ...Rotatable screw in nut | 466 | ..About turning axis of work engaging portion |
| 400 |Screw attached to joint | 52 | WRENCH, SCREWDRIVER, OR DRIVER THEREFOR |
| 401 |Nut attached to joint | 53.1 | .With elongated hot line stick |
| 402 | ...Rotatable nut on screw | 53.11 | ..Globe manipulator |
| 403 |Screw attached to joint | 53.12 | ...Rotatable grasper |
| 404 |Nut attached to joint | 53.2 | .Stud-removal and implacement |
| 405 | ..By manipulation of pivot-carrying member | 429 | .Responsive to movement of work |
| 406 | ...With angular orientation of eccentric pivots joining handles | 467 | .Responsive to torque on work |
| 407 | ..By relative sliding or slipping of handles | 468 | ..With marking mechanism |
| 408 | ..With fulcrum-carrying member | 469 | ..Means for regulating motor |
| 409 |With positive lock for member | 470 | ...Fluid motor |
| 409.5 |With spring urged lock for member | 471 | ..Permanently deformable component |
| | | 472 | ..Relatively movable work contacting components |
| | | 473 | ..Rotatable, coaxial, clutching components |
| | | 474 | ...Having intermediate, disparate, interlock element |
| | | 475 | ...Having complementary formations |

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| 476 | ...Having friction type contact surfaces | 432 | ...Including vibratory work supporting member |
| 477 | ..Work engaging portion attached to and turned by resilient member | 433 | ...Including revolvably driven work contacting member |
| 478 | ..Work engaging portion pivotally or rotatably connected to handle | 434 | ...Including driven, flexible, work supporting strip |
| 479 | ...With electric signal device | 435 | ...Including driven, reciprocating, conveying member |
| 480 | ...Axis of connection coaxial to rotational axis of work | 57.38 | ..With tensioning means |
| 481 | ...With arm extending from portion | 57.39 | ..Step by step |
| 482 | ...With pivoted locking pawl | 57.4 | ..With support |
| 483 | ...With arm extending from portion and through connection | 57.41 | ...Vehicular |
| 54 | .Machine | 57.42 | ..Direct drive |
| 55 | ..Bolt-holding | 57.43 | ...Flexible |
| 56 | ...Gear-operated | 57.44 | ...Fluid |
| 57 | ..Gear-operated | 57.45 | ...Oblique angle |
| 57.11 | ...With motor | 57.46 | ...Tangential engagement |
| 57.12 | ...Oblique angle drive | 57.5 | .Turret head |
| 57.13 | ...Right angle drive | 74 | .Wheel or endless track operated |
| 57.14 | ...Parallel axis drive | 75 | ..Hub-rim grasp |
| 57.15 | ...Round work | 76 | ...Internal |
| 57.16 | ...With additional work-engaging means | 58 | .Handle clutched to head |
| 57.17 | ...Flexible jaw | 58.1 | ..With additional head-turning means |
| 57.18 | ...Cam-operated jaw | 58.2 | ..Radially slotted or open end head |
| 57.19 | ...Fluid-operated jaw | 58.3 | ..Axially movable clutching parts |
| 57.2 | ...Pivoted jaw | 58.4 | ..Positive two-way drive (e.g., dog clutch) |
| 57.21 | ...Sliding jaw | 58.5 | ..Radially extending eccentrically movable handle |
| 57.22 | ..Multiple drive or driven means | 59.1 | ..Ball or roller wedge |
| 57.23 | ...With magazine | 60 | ..One-way detent drive, e.g., ratchet |
| 57.24 | ...With support | 61 | ...Pivoted pawl |
| 57.25 | ...Vehicular | 62 | ...Reversing |
| 57.26 | ..Adjustable angle drive | 63 |Single |
| 57.27 | ...Flexible shaft | 63.1 | ...Reversing |
| 57.28 | ..Oblique angle drive | 63.2 | ...Single pawl |
| 57.29 | ..Right angle drive | 436 | .Having work engaging and force exerting portion inserted into cavity (e.g., allen wrench, screwdriver) |
| 57.3 | ..Parallel axis drive | 437 | ..Combined with or usable as diverse-type wrench |
| 57.31 | ..Common axis drive | 438 | ..Having structure adapting portion or tool for separation |
| 57.32 | ..Double or duplex | 439 | ..Including discrete, separately usable inserted portions |
| 57.33 | ..Round work | 440 | ...Pivotally or rotatably mounted |
| 57.34 | ...With additional work-engaging means | 441 | ..Inserted portion cuts into or deforms cavity |
| 57.35 | ...With support | 442 | ..Inserted portion having relatively movable components |
| 57.36 | ..Multiple work-engaging means | | |
| 57.37 | ..With feed or magazine means | | |
| 430 | ...Utilizing fluid to convey work | | |
| 431 | ...Including chute having longitudinal axis collinear with rotational axis of work turning portion | | |

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| 443 | ...Having camming or wedging element for moving components | 90.1 | .Plural pivoted jaws and handle-lever |
| 444 |Axially shiftable element located between and wedging against components | 90.2 | ..Cam or gear operated |
| | | 90.3 | ..Jaws enclose work |
| 445 |With threaded surface for cooperating with mating tool structure | 90.4 | ...Including latch to connect jaw to handle-lever |
| | | 90.5 |At least three jaws enclose work |
| 446 |Rotatable element located between and camming against components | 90.6 | ...Including latch to connect pivoted jaws |
| 447 | ..Having cooperating threaded element type actuating means | 90.7 |At least three jaws enclose work |
| 448 | ...Having resilient or spring biased component | 90.8 |Two jaw pairs connected by latch |
| 449 |Biased component rotated about axis collinear to rotational axis of tool | 90.9 | ..Including means to adjust or to secure jaw in adjusted position |
| 450 | ..Inserted portion mounted to pivot or swivel relative to longitudinal axis of handle | 91.1 | ..Slidable pivot |
| | | 91.2 | ..First jaw pivoted directly to handle and to second jaw |
| 451 | ..With separate means for guiding or gripping work | 91.3 | ..Two jaws pivoted directly to intermediate member |
| 452 | ...Having resilient, relatively movable, work gripping members | 92 | .Pivoted inner jaw |
| | | 93 | ..Nut or screw fulcrum |
| 453 |With camming or wedging element for moving members | 94 | ..Pin fulcrum |
| | | 95 | ...Roller jaw |
| 454 | ...Having pivoted, relatively movable, work gripping members | 96 |Pinion |
| | | 97 | ...Spring-pressed |
| 455 |With camming or wedging element for moving members | | .Pivoted outer jaw |
| | | | ..Fixed fulcrum |
| 456 | ...Having member with work underlying portion | 98 | ...Nontraveling jaw |
| | | 99 |Spring-pressed |
| 457 |Member spring biased for axial movement | 100 | ...Traveling jaw |
| | | 101 |Nut fulcrum |
| 458 |Resilient member | 102 |Rocking sleeve |
| 459 | ..Inserted portion having threaded periphery | 103 |Spring-pressed |
| | | 104 |Fulcrum washer |
| 460 | ..Inserted portion having plural, noncollinear blades (e.g., Phillips) | 105 |Sleeve-enclosed nut |
| | | 106 | ..Traveling fulcrum |
| 461 | ..Inserted portion having plural, separate, work-engaging projections | 107 | ...Threaded handlebar |
| | | 108 |Axillary rotating |
| | | 109 | ...Slotted guide |
| 64 | .Flexible | 110 | ...Fulcrum tooth and rack |
| 65 | ..Threaded adjustment | 111 | .Pivoted side jaw |
| 65.2 | ..Link | 112 | ..Bevel-closing |
| 68 | ...Handle jaw | 113 | ...Cammed into socket by axial nut or screw |
| 69 |Pivoted | 114 |Sleeve socket nut |
| 70 |Duplex | 115 | ...Rotating ring |
| 65.4 | ...Toothed adjustment | 116 | ...Wedge |
| 73 | .U-crank arm | 117 | ..Rocking link |
| 77 | .Double-ended, simultaneous adjustment | 118 | ..Transverse screw clamp |
| | | 126 | .Sliding jaw, handle-lever grip |
| | | 127 | ..Claw |

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| 128 | .Sliding jaw, cam-closing | 176.15 | ..Having means to engage work axially |
| 129 | .Slidable jaw adjustments | 176.2 | ...And means to engage peripheral face of work |
| 129.5 | ..Rack | 176.3 | ..Having relatively movable jaws |
| 131 | ...Interlocking jaw handles | 119 | .Rigid jaws |
| 132 | ...Locking set screw or nut | 120 | ..Round work |
| 133 | ...Pinion lock | 121.1 | ..Enclosed (e.g., socket) |
| 134 | ...Pivoted rack catch | 122 | ...Watch and clock keys |
| 135 |Nontraveling | 123 |Dust protectors |
| 136 |Intermediate fulcrum | 124.1 | ...With nut ejectors |
| 137 |Transverse | 125 | ...Work-holding |
| 138 |Cam-seated | 124.2 | ...Slotted socket |
| 139 |Indirectly operated | 124.3 | ...Through socket and perpendicular handle |
| 140 |Intermediate fulcrum | 124.4 | ...Plural sockets |
| 141 | ...Shank-engaged cam | 124.5 |Slidably or pivotally connected to handle or each other |
| 142 | ...Sliding rack catch | 124.6 | ...Having axial opening for removable handle |
| 143 |Cam-seated | 124.7 | ...Having perpendicular handle |
| 144 |Screw- or nut-seated | 125.1 | ..Double-ended |
| 145 |Spring-seated | 177.1 | .Handle or shank |
| 146 | ...Spring-seated jaw frame | 177.8 | ..Angularly adjustable handle |
| 147 |Integral frame and teeth | 177.9 | ...With yieldable one-way detent |
| 148 | ...Wedge lock | 177.2 | ..Extensible handle or handle extension |
| 149 | ...Wedge pusher | 177.3 | ..Having finger opening |
| 150 | ..Shank grip | 177.4 | ..Having means to store parts |
| 151 | ...Side jaw | 177.5 | ..Having terminal cross arm |
| 152 | ...Clutch yoke | 177.6 | ..Foldable or flexible |
| 153 | ...Roller clutch | 177.7 | ..Having pivoted handle section |
| 154 | ...Locking incline | 177.75 | ...Universal joint |
| 155 | ..Thread | 177.85 | ..Including socket and boss type connecting means |
| 156 | ...Displaceable half nut | 178 | .Reversible jaws |
| 157 | ...Displaceable nut or screw | 179 | .Sliding jaw face |
| 158 |Traveling screw, shank rack | 462 | .Having stationary structure for supporting wrench or screwdriver |
| 159 | ...Interrupted | 180.1 | .Attachment, or including adjunct or replaceable portion |
| 160 |Nut set | 181 | ..Cutters |
| 161 |Traveling nut | 182 | ...Rotary |
| 162 |Traveling screw, shank rack | 183 | ..Roller clutch |
| 163 | ...Right and left threads | 184 | ..Shank-embracing |
| 164 | ...Rotatable threaded handle shank | 185 | ..Socket reducers |
| 165 | ...Sliding side jaw | 185.1 | ..Removable jaw face |
| 166 | ..Nontraveling rotatable nut | 185.2 | ..Movably mounted |
| 167 |Intermediate | 186 | .Jaw faces |
| 168 |Causing outer jaw to slide | 19 | DEFORMABLE HEAD MALLET |
| 169 |Terminal | 20 | HAMMER |
| 170 |Causing outer jaw to slide | | |
| 171 | ...Nontraveling rotatable screw | | |
| 172 |Bracket-bearing | | |
| 173 |Spiral groove engaged by slidable actuator | | |
| 174 | ...Traveling and rotating nut | | |
| 175 |Threaded handlebar | | |
| 176 | ...Traveling and rotating screw | | |
| 176.1 |Shank rack | | |
| 176.1 | .Spanner | | |

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|-----|--|--------|---|
| 21 | .Having work protector surrounding face | DIG 2 | SPIRAL DRIVE FOR WRENCHES |
| 22 | .Having shock absorbing means | DIG 3 | WRENCHES, THREAD-ADJUSTMENT LOCK |
| 23 | .Having nail placer | DIG 4 | DOUBLE ADJUSTMENTS, SLIDING JAW |
| 24 | ..Magnetic | DIG 5 | WRENCH SCALES AND INDICIA |
| 25 | .Having replaceable striking face | DIG 6 | SPRING MEANS BIASING WRENCH JAWS |
| 26 | .Having plural striking faces | DIG 7 | BICYCLE SPOKE OR NIPPLE WRENCH |
| 27 | .Rod encircling type | DIG 8 | CROWFOOT-TYPE WRENCHES |
| 28 | BIT STOCK HAVING MANUAL DRIVE MEANS (E.G., BRACE) | DIG 9 | PIVOTED JAW LATCH MEANS |
| 29 | .Having ratchet mechanism | DIG 10 | IRIS-TYPE WRENCH HEAD |
| 30 | ..Straight crank arm | DIG 11 | ADAPTERS FOR DIFFERENT-SIZED FASTENERS |
| 31 | ..Adjustable pawl | DIG 12 | POWER HAMMER |
| 32 | ..Pivoted pawl | | |
| 33 | ..Sliding pawl | | |
| 34 | .Straight stock having side driving gear | | |
| 35 | .Having U-shaped crank arm | | |
| 36 | ..Speeding gear | | |
| 37 | ..Bit shaft inclined relative to crank | | |
| 484 | FOR ADJUSTING VARIABLE POSITIONED PARTS | | |
| 485 | SPREADER | | |
| 486 | RESILIENT ARTICLE TENSIONER OR COMPRESSOR | | |
| 489 | HANDLE FOR TOOL | | |
| 490 | .Having storage compartment | | |
| 491 | .Having discrete relatively movable tool clamp | | |
| 492 | .Having cap or reinforcing means | | |
| 487 | HAND HELD HOLDER OR HAVING CLAMP | | |
| 488 | MISCELLANEOUS | | |

CROSS-REFERENCE ART COLLECTIONS

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| 900 | WRENCH OR SCREWDRIVER CONSTRUCTED FROM SPECIFIC MATERIAL |
| 901 | WRENCH OR SCREWDRIVER ADAPTED TO TURN EYE SCREW |

FOREIGN ART COLLECTIONSFOR 000 **CLASS-RELATED FOREIGN DOCUMENTS****DIGESTS**DIG 1 **TOOL-SUPPORT ADJUNCTS**

