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|------|-------------------------------------|-------|--|
| 1 R | MISCELLANEOUS | 43 | ..Dial and hand |
| 1 A | .Shutters | 44 | .Operating devices |
| 1 B | .Game counters | 45 | ..Electric |
| 1 C | .Numeral wheels | 46 | ..Punch |
| 1 D | .Casings | 47 | .Resetting |
| 1 E | .Toy cash registers | 48 | ..Direction indicator |
| 1 F | ."Fugitive one" mechanism | 49 | .Hundreds indicator |
| 2 | CASH REGISTERS AND RECORDERS | 51 | VOTING MACHINES |
| 3 | .Check printing | 50 R | .Recording |
| 4 | CASH RECORDERS | 50 A | ..Recording and registering |
| 5 | .Manual | 50 B | ..Voting machines, recording |
| 7 R | CASH REGISTERS | 52 | .Assembly |
| 6 | .Departmental | 53 | .Check operated |
| 8 | .Key set | 54 R | .Key set |
| 9 | ..Crank operated | 54 A | ..Interlocks, voting machines |
| 10 | ..Drawer operated | 54 B | ..Endorsed candidate lockout |
| 11 | ..Motor operated | 54 C | ..Primary voting mechanism |
| 12 | .Key operated | 54 D | ..Cumulative interlocks for voting machines |
| 13 | ..Detail adders | 54 E | ..Independent voting mechanism |
| 14 | ..Differential mechanism | 54 F | ..Voting machines, electric |
| 15 | ...Key coupled | 55 R | .Key operated |
| 16 | ...Lost-motion mechanism | 55 A | ..Interlocks; voting machine |
| 17 | .Checks | 55 C | ..Primary lockouts |
| 18 | ..Balls | 55 E | ..Independent voting mechanism |
| 19 | .Dial | 56 | .Vote counters |
| 20 | ..Independent indicator | 57 | REGISTERING BALLOT BOXES |
| 21 | ..Lever operated | 375 | SYSTEMS CONTROLLED BY DATA |
| 22 | .Drawer-operating mechanism | | BEARING RECORDS |
| 23 | .Indicator mechanism | 376 | .Operations analysis |
| 24 | ..Shutters | 377 | .Time analysis |
| 25 | ..Tablet droppers | 378 | ..Price determination |
| 26 | .Key arresters | 379 | .Banking systems |
| 27 | .Key locks | 380 | .Credit or identification card systems |
| 28 | .Lid registers | 381 | ..With vending |
| 7 A | .Refund devices and coin change | 382 | ..Permitting access |
| 33 | FARE REGISTERS | 382.5 | ...Changeable authorization |
| 29 R | .Multiple | 383 | .Mechanized store |
| 29 A | ..Fare register seal | 384 | .Transportation |
| 30 R | .Cab-fare indicating | 385 | .Inventory |
| 30 A | ..Meter preparation | 386 | .Voting machine |
| 31 R | .Ticket delivery | 400 | ORDNANCE OR WEAPON SYSTEMS |
| 31 T | ..Issue and print | | COMPUTER |
| 32 | .Registering boxes | 401 | .Bombing |
| 34 | .Dial and cylinder | 402 | ..Toss |
| 35 | .Belt | 403 | .Torpedo director |
| 36 | .Parallel axes | 404 | .Aiming |
| 37 | ..Cylinder | 405 | ..Mechanical computation |
| 38 | ..Dial and hand | 406 | ...With tabular chart, scale, or graph |
| 39 | ..Disk | 407 | ..Compensating for weapon movement (e.g., tilt) |
| 40 | .Single axis | | |
| 41 | ..Concentric disk | | |
| 42 | ..Cylinder | | |

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|-----|---|--------|---|
| 408 | .Projectile flight time - fuse setting | 455 | ...Light level control |
| 409 | .Parallex compensation | 456 | ...Multiple column code |
| 410 | .Coordinate conversion | 457 | ...Holographic |
| 411 | .With target tracking means | 458 | ...Perforated record |
| 412 | ..Position or course prediction | 459 |Stationary |
| 413 | ..Calculating speed and direction | 460 |Matrix of cells |
| 414 | .Range finder | 461 |One dimensional scan |
| 415 | ..With range rate change | 462.01 | ...Bar code |
| 416 | ..Range prediction | 462.02 |Bar code having a plurality of bars with different heights (e.g., Postnet) |
| 417 | .Ballistic factor determination | 462.03 | ...Circular bar code (e.g., concentric circles or sun burst) |
| 418 | .Hand adjusted scale mechanism | 462.04 |Bar code with bars of more than two colors (e.g., multicolored bar code, multilevel gray) |
| 419 | RECORD CONTROLLED CALCULATORS | 462.05 |Means to read bar code on a transparent medium (e.g., film) |
| 420 | .Machine control | 462.06 |Light level adaptation |
| 421 | .Multiplying | 462.07 |Means to decode multiple types or formats of bar code symbols (e.g., UPC, JAN, EAN, etc.) |
| 422 | .Dividing | 462.08 |Bar code location or selection |
| 423 | .Subtraction | 462.09 |2-D bar code |
| 424 | .Item distribution | 462.1 |Means to decode a 2-D bar code |
| 425 | .Sorting and accounting | 462.11 |Including an imager (e.g., CCD or camera-type reader) |
| 426 | .Relay- or contact-type storing or accumulating | 462.12 |Bar code stitching (e.g., forming a complete bar code from several partial scans) |
| 427 | .Differential mechanism, synchronous | 462.13 |Combined with diverse art device (e.g., security tag deactivator) |
| 428 | .Differential mechanism, stop set | 462.14 |Stationary bar code reader |
| 429 | .Translators | 462.15 |Programming or computer interface feature |
| 430 | .Key operators | 462.16 |Bar width determination |
| 431 | .With data comparing | 462.17 |Using plural sensors |
| 432 | .With printing | 462.18 |Using counter or timer |
| 433 | ..With paper feeding | 462.19 |Including count or time to binary conversion (e.g., Wide=1, Narrow=0) |
| 434 | .With punching | 462.2 |Aiming or positioning adjunct (e.g., viewfinder, pointer, or positioning aid) |
| 435 | CODED RECORD SENSORS | 462.21 |Using spotter beam |
| 436 | .Readout control | 462.22 |Extended reader working range (e.g., multiple focal planes) |
| 437 | .Error checking | | |
| 438 | .Testing | | |
| 439 | .Particular sensor structure | | |
| 440 | ..Multiple sensor | | |
| 441 | ..Electrical contact | | |
| 442 | ...Perforated | | |
| 443 |Static sensed | | |
| 444 | ..Electromechanical | | |
| 445 | ...Perforated record | | |
| 446 |Sensing element in continuous contact with record | | |
| 447 |Array | | |
| 448 | ...Raised or depressed portions on record | | |
| 449 | ..Magnetic | | |
| 450 | ...Strengthen or diminish field or flux | | |
| 451 | ..Capacitive | | |
| 452 | ..Pneumatic | | |
| 453 | ..Mechanical | | |
| 454 | ..Optical | | |

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| 462.23 |Auto-focusing | 474 | .Synchronization |
| 462.24 |Using an imager (e.g., CCD or camera-type reader) | 475 | .Feed mechanisms |
| 462.25 |Reader processing circuitry | 476 | ..Control circuits |
| 462.26 |Amplitude control (e.g., automatic gain control) | 477 | ...Direction |
| 462.27 |Analog to square wave converter (e.g., digitizer, binarizer, slicer) | 478 | ..Pneumatic feed |
| 462.28 |Clock generating or sampling circuit | 479 | ..Carriage |
| 462.29 |Noise reduction circuit (e.g., electrical filters) | 480 | ..Direction reverse |
| 462.3 |Scanner power on/off | 481 | ..Intermittent feed |
| 462.31 |Including object detection | 482 | .Hand feed |
| 462.32 |Specific scanning detail (e.g., scanner with a specific scanning field of view) | 483 | .Guides |
| 462.33 |Moving a spot of light (e.g., flying spot scanner) | 484 | ..Adjustable |
| 462.34 |Hologram | 485 | ..Aligning records |
| 462.35 |Having a transmissive optical element (e.g., lens, prism, or aperture) | 486 | .Holding devices |
| 462.36 |Using a moving mirror | 487 | RECORDS |
| 462.37 |Pattern mirror detail for nonrotating mirror | 488 | .Laminated |
| 462.38 |Rotating | 489 | .Perforated |
| 462.39 |Polygon | 490 | .Projections |
| 462.4 |Pattern mirror detail for rotating mirror | 491 | .Fluorescent, phosphorescent, radiation emitting |
| 462.41 |Using an imager (e.g., CCD) | 492 | .Conductive |
| 462.42 |Illumination detail (e.g., LED array) | 493 | .Magnetic |
| 462.43 |Specified housing or mounting detail | 494 | .Particular code pattern |
| 462.44 |Body attached | 495 | .Templates and guides |
| 462.45 |Hand-held (e.g., portable) | 61 R | CALCULATORS |
| 462.46 |Wireless link (e.g., RF, IR, etc.) | 58 R | .Recording |
| 462.47 |Interchangeable scanning head or detachable handle | 59 R | ..Key operated |
| 462.48 |Trigger detail | 59 A | ...Miscellaneous key operated recording |
| 462.49 |Wand-type reader (e.g., manual scan) | 59 BC | ...Multiplying unitary base |
| 468 | ...Invisible | 59 BD | ...Wahl type |
| 469 | ...Color coded | 59 BE | ...Flat bed |
| 470 | ...With scanning of record | 59 BF | ...Attachment for typewriters |
| 471 |Cathode-ray tube | 59 CP | ...Clear sign printing |
| 472.01 | ...Hand-held (e.g., portable) | 59 BG | ...Power operated |
| 472.02 | ...Wireless link (e.g., RF, IR, etc.) | 59 TP | ...Total printing |
| 472.03 | ...Wand-type reader (e.g., manual scan) | 59 T | ...Typewriter |
| 473 | ...Light pipes | 59 BH | ...Addendoraphs |
| | | 60 R | ..Key set |
| | | 60.11 | ...By means other than printing or punching |
| | | 60.12 | ...Combined with typewriter |
| | | 60.13 | ...Multiple recording means |
| | | 60.19 | ...Distinctive color |
| | | 60.15 | ...Non-numerical data |
| | | 60.16 |Alphabetical |
| | | 60.17 |Clearance symbol |
| | | 60.18 |Function indicating character or symbol |
| | | 60.2 | ...True negative total recording |
| | | 60.22 |Electric readout |
| | | 60.23 | ...With split printing |
| | | 60.24 | ...With extended totals |
| | | 60.25 | ...Non-recording controls |
| | | 60.26 | ...Non-add controls |

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|-------|---|--------|---|
| 60.27 | ...Gang recording | 200 R | .Including means utilizing fluid, e.g., fluid amplifiers |
| 60.28 |With zero recording controls | 201 R | ..Digital pulse |
| 60.29 |By punching | 201 ME | ...Moving elements |
| 60.3 |With total taking | 201 FS | ...Fluid sensor |
| 60.31 |By zeroizing result elements | 201 PF | ...Pure fluid |
| 60.32 |With blank cycle elimination | 200 PF | ..Analog pure fluid |
| 60.33 |By sensing result elements | 200 WB | ..Weigh beam |
| 60.34 |Combined with zeroizing | 62 R | .Motor actuated |
| 60.35 |By differential timing | 62 A | ..Key set |
| 60.37 |By direct impression from result elements | 62 B | ..Key operated |
| 60.38 | ...Digit by digit recording | 62 C | ..Wright - Degene (underwood) type |
| 60.39 | ...With total taking | 62 D | ..Calculators, motor actuated |
| 60.4 |Electrical | 62 E | ..Calculators, motor actuated, Elliot Fischer type |
| 60.41 | ...With traveling paper carriage | 62 F | ..Motor circuit and clutch control (mult. and div. control) |
| 60.42 |Control of carriage feed | 63 R | .Traveling carriage |
| 60.44 |Shuttle type operation | 63 A | ..Manually operated |
| 60.45 |Power operation | 63 B | ..Machines with ten keys or less |
| 60.46 |Columnar | 63 C | ..With master wheels |
| 60.47 |Control of function by carriage | 63 D | ..Power operated |
| 60.48 |Totalizer selection | 63 E | ..Auto-control incident to multiplying and dividing |
| 60.49 |Locking devices | 63 F | ..Auto-control incident to dividing |
| 60.5 |Carriage bore function control structures | 63 G | ..Divided - divisor aligning mechanism |
| 60.51 |Control of platen or paper feed | 63 H | ..Automatic multiplication |
| 60.52 |Control of functions from platen or paper feed | 63 J | ..Both factors preset in full |
| 60 D | ...Dalton | 63 K | ..One factor only preset in full |
| 60 E | ...Ellis | 63 L | ..Miscellaneous |
| 60 G | ...Gardner | 63 KP | ..Key operated |
| 60 HP | ...Hopkin | 63 KS | ..Key set |
| 60 MT | ...Multiple totalizers | 63 DE | ..Decimal elimination |
| 60 M | ...Multiplying | 64 | .Adding pencils |
| 60 PY | ...Pay roll | 64.3 | .Decimal point locators |
| 60 S | ...Split | 64.7 | .Photographic |
| 60 SS | ...Sundstrand | 65 | .Bar and disk |
| 60 TK | ...Ten key | 66 | .Cylinder and disk |
| 60 C | ...Item counting | 67 | .Spiral |
| 60 TN | ...True negative | 68 | .Ball |
| 60 HN | ...Hanson | 69 | .Bar |
| 60 P | ...Print | 70 R | ..Slide rules |
| 60 AP | ...Automatic total print | 70 A | ...Special use slide rule |
| 60 TW | ...Typewriter | 70 B | ...Runners, cursors |
| 60 B | ...Burroughs | 70 C | ...Scales |
| 60 CK | ...Crank | 70 D | ...Slide rule pencils |
| 58 M | ...Miscellaneous | 71 R | .Belt |
| 58 CW | ..Check writers and markers | 71 A | ..Slide rule tape |
| 58 CF | ..Paper and carriage feed | 72 | .Parallel axes |
| 58 PS | ..Price scales | 73 | ..Cylinder |
| 58 P | ..Print | | |

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|-------|--|-------|---|
| 74 | ..Disk | 61 GM | .Geometrical |
| 75 R | ...Key operated | 61 J | .Miles per gallon |
| 75 T |Thomas-type machines | 61 K | .Partial product wherein result is obtained in (one) summation |
| 76 | ..Gear | 61 P | .Polynominal |
| 77 | .Single axis | 61 L | .Variators - change speed gear devices |
| 78 R | ..Concentric disk | 61 M | .Volume and price computers |
| 78 A | ...Adders | 61 NV | .Navigational |
| 78 F | ...Financial | 61 PS | .Computing scales |
| 78 G | ...Games | 61 PA | .Mechanical input-output |
| 78 M | ...Mathematics | 61 PB | .Input-output with storage |
| 78 N | ...Navigation | 61 PC | .Input-output from racks to computer |
| 78 RC | ...Rhythm calculators | 61 PD | .Input-output from register to computer |
| 79 | ..Cylinder | 61 PE | .Input-output from keyboard to computer |
| 79.5 | ...Slide rules | 61 PF | .Input-output from typewriter to computer |
| 80 | ...Keyless | 61 PG | .Electrical from computer to adding machine |
| 81 R |Lever operated | 61 PH | .Input-output electrical from calculator to typewriter |
| 81 A |Odner type | 61 PJ | .Input-output electrical from computer to card or tape |
| 82 R | ...Key operated | 61 PK | .Input-output calculator to indicator, printer, etc. |
| 82 C |Comptometer | 61 PL | .Storage medium conversion |
| 82 FK |Five key | 61 PM | .Interconnection, sequencing and programming |
| 82 TK |Ten key | 61 S | .Transportation |
| 82 MK |More than ten keys | 61 T | .Transportation balance computers |
| 82 SK |Single key operated multiplying | 61 V | .Transportation time-distance schedules |
| 82 K |Key set | 90 | PEG TALLY BOARDS |
| 83 | ..Disk; dial and hand | 102 | TYPEWRITER WORD COUNTERS |
| 84 | ...Slide rules | 94 R | LIQUID REGISTERS |
| 85 R | ..Tabular | 94 A | .Volume and price |
| 86 | ..Belt | 98 R | PACKAGE OPERATED |
| 87 R | ..Cylinder | 98 A | .Reactive package |
| 87 A | ..Computing and weighing scales | 98 B | .Package operated switch |
| 88 R | ..Disk | 98 C | .Interrupted radiant energy ray |
| 88 F | ...Financial | 100 | REGISTERING BOXES |
| 88 G | ...Games | 99 R | PLATFORM OPERATED |
| 88 M | ...Mathematics | 99 A | .Platform actuated traffic counters |
| 88 N | ...Navigation | 101 | STAMP |
| 88 RC | ...Rhythm calculators | 93 | GATE AND TURNSTILE OPERATED |
| 89 R | ..Sheet | 95 R | ODOMETERS |
| 89 A | ...Computing and weighing scales | 96 | .Details |
| 85 FC | ..Rhythm cycle (fertility) | 97 | .Trip and total |
| 61 A | ..Miscellaneous | 95 A | .Excess speed |
| 61 B | ..Tabular | 95 B | .Hub |
| 61 C | ..Integrating | | |
| 61 D | ..Chart integrators | | |
| 61 DP | ..Decimal point indicators | | |
| 61 E | ..Mean or average computers | | |
| 61 F | ..Multiplying machine - miscellaneous | | |
| 61 FA | ..Precomputed products | | |
| 61 FB | ..Variator with counter | | |
| 61 FC | ..Variator with accumulator | | |
| 61 FD | ..Partial products | | |
| 61 FE | ..Successive addition | | |
| 61 G | ..Odds computers | | |

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| 95 C | .Odometers, pendulum type | 132 R | WITH CONTROL MEANS OPERABLE ON PREDETERMINED REGISTER READING |
| 103 | ROTATION COUNTERS | 132 A | .Predetermined count, self- resetting |
| 103.5 R | .Comparing | 132 E | .Electrical |
| 103.5 E | ..Extensometers | 133 R | TRANSFER MECHANISM |
| 104 | .Timing devices | 134 | .Cam and lever |
| 105 | PEDOMETERS | 135 | .Deep notch |
| 123 | BALL BUTTON OR PUSH BUTTON INDICATOR | 136 | .Differential gears |
| 124 | BAR AND SCALE | 137 | .Independent actuator |
| 125 | BELT | 138 | ..Successive |
| 127 | PIVOTED INDICATOR | 139 R | .Intermediate pinion |
| 106 | ANGLED AXES | 139 A | ..Internal pinion |
| 107 | SPIRAL | 140 | .Side tooth |
| 108 | PARALLEL AXES | 141 | ..Lock |
| 109 | .Gear | 142 | .Traveling pawl |
| 110 | .Cylinder | 143 | ..Side action |
| 111 | .Dial and disk | 133 A | .Electrical |
| 112 | .Dial and hand | 144 R | ZERO-SETTING DEVICES |
| 113 | .Disk | 144 DM | .Disconnected member |
| 114 | ..Hand operated | 144 M | .Miscellaneous |
| 115 | SINGLE AXIS | 144 PN | .Pawl and notch |
| 116 | .Concentric disk | 144 ME | .Magnetic, electromagnetic, and electric motor reset |
| 117 R | .Cylinder | 144 C | .Complement |
| 118 | ..Single cylinder | 144 HC | .Heart cam |
| 117 A | ..Manually operated | 144 D | .Dispensing |
| 119 | .Differential gears | 144 S | .Shaft set, miscellaneous |
| | .Dial and hand | 144 SS | .Separate shaft |
| 120 | ..Multiple hand | 144 SM | .Shaft movable |
| 121 | ..Single hand | 144 SP | .Spring |
| 122 | .Disk | 144 MG | .Mutilated gear |
| 91 R | OPERATING DEVICES | 144 TP | .Traveling pawl |
| 91 PR | .Plural registers | 144 ET | .Elapsed time registering |
| 91 A | .Double acting pawl escapement with double arm pawl | 144 MA | .Maximum demand |
| 91 B | .Billiards and pool | 144 B | .Rake reset |
| 91 C | .Photograph | 144 EA | .External mechanism only with or without drive disconnect |
| 91 D | .Time interval totals | 144 E | .Electrical |
| 91 E | .Telephone | 144 TB | .Total printing |
| 91 F | .Pressure and vacuum | 145 R | KEYBOARDS |
| 91 G | .Summation | 146 | .Auxiliary |
| 91 H | .Inertia, speed and distance indicator | 145 A | .With total transfer to keyboard or the like |
| 91 J | .Register key | | |
| 91 K | .Register ball actuated | | |
| 91 L | .Mechanical store | | |
| 91 M | .Magnetic | | |
| 128 | ALARM MECHANISM | | |
| 130 R | LOCKING MECHANISM | | |
| 130 KD | .Incomplete key depression | | |
| 130 TC | .Typewriter computing | | |
| 131 R | OVERTHROW PREVENTERS | | |
| 131 FD | .Frictional detent | | |
| 131 M | .Miscellaneous | | |
| 131 JA | .Jamming action | | |
| | | | <u>CROSS-REFERENCE ART COLLECTIONS</u> |
| | | 900 | MEANS TO AFFIX BAR CODE (E.G., ATTACHING, ETCHING, COATING, PRINTING, ETC.) |

901 **BAR CODE READER SPECIALIZED TO
 READ CODE ON A HIGHLY
 REFLECTIVE SURFACE**

FOREIGN ART COLLECTIONS

FOR 000 CLASS-RELATED FOREIGN DOCUMENTS

Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collections listed below. These Collections contain ONLY foreign patents or non-patent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

CODED RECORD SENSORS (235/435)

.Particular sensor structure
 (235/439)
..Optical (235/454)
FOR 100 ...Bar code (235/462)
FOR 101Bar with detection (235/463)
FOR 102Radially configured (235/464)
FOR 103Color (235/465)
FOR 104Timing (235/466)
FOR 105Rotating prisms or mirrors
 (235/467)

CODED RECORD SENSORS (235/435)

.Particular sensor structure
 (235/439)
..Optical (235/454)
FOR 106 ...Hand held (235/472)

