

This heading comprises only the following subject matter:

- . apparatus and methods for detecting, indicating and recording mechanical vibrations *other than* sound and sound-like waves
- . arrangements and adaptations of measurement-expressing apparatus solely for special purposes *for which no provision exists under other headings*, or for determination of values *by methods excluded from other headings*
- . casings and mountings for the expressing-elements of this heading, and for the movements of measuring-instruments *when these are described in such general terms as to render their allocation to a particular class or type of instrument inapposite*
- . construction of the expressing elements of measuring instruments, these being defined as: devices, apparatus, and arrangements of apparatus for expressing a measurement in the form of a momentary indication, a recording, or a totalizing effected by integration, and which are intended to be actuated by the elements of measuring instruments which produce movement as a result of excitation by, or reaction to, the metered conditions
- . mechanical relay and follow-up devices for giving multiplied and strengthened movement to measurement-expressing apparatus

but does not include the following subject matter, which is to be found in the headings indicated:

- . apparatus for recording, involving relative movement between a transducing system and a storage medium and the recording being intended for playback—G5R, Recording and playback
- . apparatus (*including* dials, knobs, scales and other graduated and reading elements) arranged or adapted solely for use in apparatus or operations met under other headings—*headings for such apparatus or operations*
- . cathode-ray tubes, and arrangements thereof for measuring—H1D, Electric discharge tubes &c. H4T, Cathode-ray tube circuits &c; image signal synthesis &c
- . construction of clockwork mechanism for recording—G3T, Timing; date indicating
- . construction of counting-apparatus—G4D, Counting-apparatus
- . construction of electric discharge devices for electro-static recording—H1X, Miscellaneous discharge apparatus
- . construction of electromagnetic and electrostatic non-discharge recording transducers—G5R, Recording and playback
- . construction of vibration detectors of telephonic type—H4J, Audio transducers, local circuits &c
- . detection and measurement of mechanical vibrations by means of systems in which a mechanical displacement is reproduced as an electrical signal—G1A, Radiation and radiation-utilising measurement &c; G1G, Acoustic measuring
- . gyroscopic integrators—G1C, Gyroscopes
- . illuminating arrangements for dials, pointers and other reading elements, utilizing luminescent materials—C4S, Luminescent materials &c
- . light-valves and other arrangements for varying the effective light value of a beam of light to agree with current variations or mechanical vibrations—G2F, Controlling light
- . means for producing a jet of ink or a stream of ink droplets—B6F, Selective printing &c; keyboards
- . pencils, pens—B6P, Writing appliances &c
- . perforators—B4B, Cutting &c
- . relay and follow-up devices forming parts of measuring or signal transmission systems—*e.g.* G1N, Electrophysical and electrochemical measurement &c; G4F, Signalling systems
- . rest-or-motion indicating-apparatus, and vibration indicators for measured speed— G1K, Speedometers; movement indicators
- . stands and holders for watches and other indicating and recording instruments— G3T, Timing; date indicating
- . systems for detecting mechanical vibrations by utilizing the mechanical waves thereby set up—G4F, Signalling systems; G1G, Acoustic measuring

Exclusion references

The exclusion references listed in this heading are not exhaustive. Reference should be made to the appropriate general heading/s for processes, materials, elements or devices which may be more widely applicable than can appropriately be classified in this heading

Relationship with the Universal Indexing Schedules (heading U1S)

U1S is used, subject to its indexing rules, to record uses and applications of inventions classified here, except insofar as these are inherent in the assigned terms of this heading

Operative date for Key entries

The operative date of the terms in this heading is earlier than that of Edition A

To facilitate searches for combinations of features, throughout this heading each feature is indexed for which a coded term is available, irrespective of novelty

- J30 . detecting, indicating and recording mechanical vibrations other than sound vibrations
 . dials and other details, improvements in, applicable to indicating, recording, and registering appliances generally. *See* measurement-expressing &c
 . measuring mechanical impedances. *See* H3U, Impedance networks &c
 measurement-expressing apparatus—
 . actuating or transmitting quantitatively from or to a distant instrument, machine, or other apparatus. *See headings concerned with signal transmission*
 . autographic recorders. *See* B6A, Stationery, bookbinding &c; G4T, Checking cash, attendances &c
 . memorandum attachments. *See* B6A, Stationery, bookbinding &c
 . null apparatus involving applications of relays to prevent displacement of measuring-member. *See* mechanical relay &c
 . relay and follow-up devices for giving multiplied and strengthened movement to indicating, recording, and registering apparatus. *See* mechanical relay &c
 . bifilar suspensions. *See* indicating (suspensions)
 . by flow of liquid controlled by apparatus tested. *See* registering &c
- J7 . casings, bezels and coverglasses, special constructions of
 . . means for supporting instruments in casings. *See* mounting &c
- J4 . damping oscillation of moving parts, arrangements for
 . resilient mountings for instruments. *See* mounting &c
 . . vibration-dampers, construction of. *See* F2S, Energy absorbing and storing; vibrating
 . driving-mechanism for record-strips. *See* recording
 . indicating—
 . . applications, to recorders, of indicating apparatus not otherwise of interest. *See* recording
 . . constructions applicable solely to liquid-in-tube indicating-means. *See such headings as:*—G1D, Heat and temperature measurements; temperature-responsive actuators; G1H, Liquid level control and indication &c; G1L, Pressure gauges; engine indicators; G1N, Electrophysical and electrochemical measurement &c
 . . drum, disc, band, tablet, and other numeral-sequence reading-elements for counting-apparatus, calculating-machines, and cash registers. *See* G4B, Mechanical calculating apparatus; G4D, Counting-apparatus; G4T, Checking cash, attendances &c
 . . actuation and restoration (*comprising only* mechanism and means contiguous to and applied directly to moving index hands, pointers, dials, and scales)—
- J1E . . . magnetic
 *Magnetic couplings are indexed also under* H2A, Dynamo-electric machines &c; *and selsyns &c under* G1N, Electrophysical and electrochemical measurement &c
- J1J . . . other than magnetic and screw-and-nut
- J1F . . . screw-and-nut
- J1S . . algebraic sum of magnitudes impressed on several instruments
 . . altering range of instrument, and magnitude of readings, by adjustment of restoring force. *See* actuation &c (other than magnetic &c)
- J1A . . by optical devices
 . . . illuminating-arrangements affording light for reading. *See* illuminating &c
 . . by utilizing persistence of vision. *See* by optical devices
- J1P . . departure from efficiency relations between quantities measured

- .. dials and scales—
- ... adjustment and indicating devices, of which the reading-elements are not of interest as indicating-means apart from electric coupling-coils, inductance coils, resistances, and variable capacitors for radio telegraphy and telephony. *See* H3Q, Radio receivers &c
- ... illuminating. *See* illuminating &c
- ... two-dimension scales for tabular multiple-indication apparatus. *See* multiple &c
- ... adjusting distances between graduations. *See* constructions &c
- ... alternative dials and scales for co-operation with single index-elements. *See* constructions &c
- J1B1 .. constructions, and details *other than* graduations
- J1B2 .. graduations (*including* form and appearance of graduations and reading-elements, and dispositions of continuous and sectional scales in unusual forms)
 - ... graduations specially modified for intersecting-edge readings. *See* intersecting-edge &c
 - ... spiral scales for radially-moving pointers. *See* multiple &c
 - ... punctuation or decimal-point adjustments. *See* graduations
 - ... readings compounded from several simultaneously-indicating denominational elements (*e.g.* “transfer” mechanism arrangements). *See* graduations
 - ... single scales from which readings of independent quantities are obtainable by means of alternative pointers. *See* constructions &c
- J1B3 .. illuminating dials, scales, pointers, and other reading-elements
 - ... arrangements utilizing luminescent materials. *See* C4S, Luminescent materials &c
 - ... illumination arrangements forming part of optical indicating-devices. *See* by optical devices
- J1C .. index hands and pointers
 - ... actuation and restoration. *See* actuation &c
 - ... double-movement modifications (*e.g.* rotary and radial). *See* multiple &c
- J1L .. intersecting-edge readings by means of scales and inclined edges
 - ... magnifying indications by—
- J1D1 .. ball and tapered slot
- J1D2 .. diaphragm and piston, with liquid column
- J1D3 .. plate, band, and wire, with roller
- J1R .. maximum and minimum readings
 - ... clock control of maximum, effecting change of registration in electric supply meters. *See* G1N, Electrophysical and electrochemical measurement &c; G1U, Measuring or testing electric or magnetic variables
 - ... measuring-instruments adapted to indicate, record, and integrate forces exceeding assigned maximum values. *See* G1W, Weighing; dynamometers
 - ... periodic-counter speed indicators without automatic means for releasing index hands. *See* G1K, Speedometers; movement indicators
- .. miscellaneous—
- J1X4 .. adjusting for effects of acceleration
- J1X3 .. by position of electric spark
- J1X10 .. clamped stop
- J1X16 .. cleaning numeral or scale-bearing members by pads attached to moving element
- J1X1 .. limiting movement of pointer by magnetic repulsion or tethering
- J1X5 .. locking index-hand
- J1X18 .. lubricating passages, channels, and reservoirs
- J1X6 .. observation of form of projected free liquid streams
- J1X7 .. phonographic indicating-apparatus
- J1X2 .. pivoted stop for zero position
- J1X8 .. preventing lost motion between actuating and indicating members by weight in volute chamber
- J1X9 .. reading aperture adjustable for inspection of contiguous indications
- J1X12 .. spring stop for zero position
- J1X14 .. testing balance of suspended and moving parts
- J1X19 .. testing endurance of instruments
 - ... multiple indications and movements apparatus (more than one defining movement of apparatus or of reading-selection, *e.g.* price-and-value indicating)—
 - ... adaptations and applications of multiple-movements indicating-apparatus for particular purposes in specific machines and apparatus. *See such headings as* G1W, Weighing; dynamometers
 - ... alternative arrangements of dials, scales, and index hands. *See* dials &c (constructions &c)
 - ... compounding single readings from simultaneously-indicating denominational elements. *See* dials &c (graduations)
 - ... other than tabular—
 - ... movements derived from independent sources
 - ... self-contained (*e.g.* interdependent rotary and radial movements of pointer over fixed spiral scale)
 - ... pointers intersecting over areas marked by co-ordinating scaler lines. *See* tabular &c
- J1H2 .. tabular or two-dimension
 - ... particular readings and differences of readings—
- J1G1 .. electric-circuit completion
- J1G2 .. other than electric-circuit

- J1Q . . . single indicating-apparatus for actuation by several measuring-instruments
 . . . single apparatus giving algebraic sum of readings from several instruments. *See* algebraic &c
- J1M . . . small manual adjustment of zero, adapted for
- J1K . . . suspensions
 . . . arrangement of suspensions in electric measuring instruments or meters. *See* G1U, Measuring or testing electric or magnetic variables
- J1N . . . with adjustable transmission-ratio in actuating-means
- J1U . . . by means not otherwise provided for
- J6 . . . modifying scale of readings, records, and integrations (*other than* simple magnifying and diminishing *and* by adjustment of restoring-force)
- J5 . . . mounting and supporting
 . . . movement determining and magnifying apparatus special to terminal indicating and recording elements of measuring-instruments (*e.g.* optical devices, multifilar suspension). *See* indicating; recording
 . . . recording—
 . . . printing-mechanism applied in measuring-instruments for manual operation to produce vouchers for particular measurements. *See such headings as* G1W, Weighing; dynamometers
 . . . printing-mechanism constructions of interest apart from applications to recording-apparatus. *See* B6C, Printing &c; B6F, Selective printing &c; keyboards
 . . . telegraphy, electric, printing and recording in. *See* G3N, Automatic electric control systems (control of receivers in writing telegraphs) H4F, Pictorial communication; H4P, Electric digital data transfer; telegraphy
 . . . anemometer and compass recorders dealing with continued angular movement in same direction. *See* co-ordinate type &c
 . . . co-ordinate type of two-magnitude direct recorders (two-dimension records *e.g.* time and pressure in barograph)—
 . . . two-dimension records in displaced sections according to uniform increments of one quantity. *See* increment-marking &c
 . . . continuously-traced curve of magnitude-relations—
 disc (*including* all forms other than drum and travelling sheet)
 drum
 travelling sheet
 . . . driving-mechanism for record-surfaces, and other details of recorders not specified as to kind of marking. *See* other than &c
 . . . other than continuously-traced curve recorders—
- J2A2A disc (*including* all forms other than drum and travelling sheet)
- J2A2B drum
- J2A2C travelling sheet
- J2H . . . driving-mechanism for unspecified recorders
 . . . graduating and printing record-surface uniformly for one quantity during process of recording (*e.g.* time printed at regular intervals.) *See* recording-surface &c
 . . . increment-marking-on-prescribed-path type of two-magnitude recorders (one dimension recorders, one quantity indirect, *e.g.* time-graduated strip perforated at each mile)—
 . . . continuously-marking recorders—
- J2B1A disc (*including* all forms *other than* drum and travelling strip)
- J2B1B drum
- J2B1D one value printed
- J2B1C travelling strip
 . . . driving-mechanism for record-surfaces and other details of recorders not specified as to kind of marking. *See* other than &c
 . . . other than continuously-marking recorders—
- J2B2E both values printed
- J2B2A disc (*including* all forms *other than* drum and travelling strip)
- J2B2B drum
- J2B2D one value only printed
- J2B2C travelling strip
 . . . spark-recorders. *See* other than &c *above*
 . . . indicating or preventing tampering—
- J2K1 . . . indicating when recorder has been opened or tampered with during operation
- J2K2 . . . preventing tampering
 lockable or sealed casings. *See* casings, bezels and coverglasses &c
 . . . magnetic recording-apparatus, construction of. *See* marking-action (magnetic)
- J2D3 . . . marking-action (*otherwise than* by pen, pencil, printing, and perforation)—
 . . . coloured or inked rollers and balls
- J2D1 . . . electric
- J2D4 . . . flame, gas, smoke, and vapour markings
- J2D7 . . . magnetic

- ... mechanical action only of stylus on surface of—
 - ... other than prepared paper
- J2D5B
- J2D5A
 - ... prepared paper
- J2D6
 - ... metal, direct marking by
- J2D2
 - ... photographic
- J2DX
 - ... unclassified
 - ... miscellaneous—
- J2X10
 - ... apparatus delivering coins or other articles upon insertion of magazine for record blank
- J2X12
 - ... co-ordinate type of three-magnitude direct recorders
- J2X11
 - ... exhaustion or breakage of sheet, indicating, and stopping recording by
- J2X4
 - ... marking-lead carried by weighted piston riding in recess in record arm
- J2X8
 - ... recording number and nature of objects in wrappers by pressure on prepared surface
- J2X5
 - ... recording surface, reducing humidity of by heating
- J2X9
 - ... recording surfaces, special, for marking by pen, pencil, printing, and perforation and where the marking-action is not specified
 - ... particular positions and operations of moving parts, recorders for, (*including* recorders of number and time of working and output of machines and apparatus, actions of operators, sequences, *and* specific settings, *but not including* two-magnitude recorders)—
 - ... apparatus for checking attendance of watchmen and other employees. *See* G4T, Checking cash, attendances &c
 - ... recorders affording measure of rate of translation or rotation with respect to time. *See* co-ordinate type &c; increment-marking &c
 - ... relative-rate recorders for two quantities (*other than* time-distance and time-revolution recorders). *See* G1K, Speedometers; movement indicators
 - ... continuously-marking recorders (record by lateral displacement or extent of mark)—
- J2C1A
 - ... disc (*including* all forms *other than* drum and travelling sheet or strip)
- J2C1B
 - ... drum
- J2C1C
 - ... travelling sheet or strip
 - ... driving-mechanism for record-surfaces, and other details of recorders not specified as to kind of marking. *See* other than &c
 - ... other than continuously-marking recorders—
- J2C2A
 - ... disc (*including* all forms other than drum and travelling sheet or strip)
- J2C2B
 - ... drum
- J2C2C
 - ... travelling sheet or strip
 - ... record-curves compounded from series of variable-displacement markings. *See* co-ordinate type &c (other than &c)
 - ... recording magnitudes of one quantity with regard to sequence only, apart from time. *See* particular positions &c
 - ... recording maximum value by continuously-marking style upon stationary record-surface. *See* particular positions &c
- J2E
 - ... recording-surface, graduation of
 - ... records of angular position throughout a complete circle by means of two or more radial markers. *See* co-ordinate type &c
 - ... rudder and like free angular displacement recorders. *See* co-ordinate type &c
- J2F
 - ... single recording-apparatus for actuation by several measuring-instruments
 - ... spark recording-apparatus, construction of. *See* marking-action (electric)
- J2G
 - ... temporary recorders
 - ... processes for developing electric charge images to produce visual images. *See* G2C, Photographic radiation-sensitive materials and their processing
 - ... registering or integrating—
 - ... apparatus for integrating accelerations to determine speeds. *See* G1K, Speedometers; movement indicators
 - ... planimeters. *See* G1X, Miscellaneous measurement
 - ... rate-changing mechanism for use in non-integrating counters. *See* G4D, Counting-apparatus
 - ... registering apart from integrating. *See* G4D, Counting-apparatus, *and headings for registers applied to specific purposes such as* G4B, Mechanical calculating apparatus
 - ... summing upon single and separated counters duration-times for specified conditions, positions, and values. *See* G4D, Counting-apparatus
- J3B
 - ... approximate or step-by-step
- J3A
 - ... continuous

- . results from combinations of measuring-instruments, deriving automatically. *See* modifying scale &c
- . special purposes, arranged and adapted solely for—
- . . action of engine and like valves and valve-gear (*other than* steam-engine and like indicators). *See* F1M, Steam engines &c
- . . animal magnetism. *See* A5K, Physiological measuring &c
- . . buildings and structures, gauges for measuring overstrain and defects in. *See* G1M, Determining dimensions and shapes
- . . carding-engine flats, adjustment of. *See* D1F, Spinning processes
- . . chronograph apparatus. *See* recording (particular positions &c)
- . . constituents of and impurities in gases, steam, and other vapours, determining. *See* G1B, Chemical analysis, testing &c
- . . electric current, duration of. *See* G1U, Measuring or testing electric or magnetic variables
- . . gearing, toothed, gauging-devices for determining shape and pitch of. *See* G1M, Determining dimensions and shapes
- . . gear ratio and diameter of wheels of cycles, velocipedes and like vehicles, determining. *See* B7J, Vehicle accessories &c
- . . letter-carriers' rounds. *See* G4T, Checking cash, attendances &c
- . . local times. *See* G3T, Timing; date indicating; G4B, Mechanical calculating apparatus
- . . magnetic meridian, indicating. *See* G1F, Surveying and navigating apparatus &c; G1N, Electrophysical and electrochemical measurement &c
- . . myographs. *See* recording; G1K, Speedometers; movement indicators
- . . presence of fish. *See* A1A, Fishing &c
- . . presence of minerals and metals. *See* E1F, Earth and rock working &c
- . . projectile revolutions, counting-apparatus for. *See* G4D, Counting-apparatus
- . . projectiles, indicating trajectories of, by trial of smoke and flame. *See* F3A, Ammunition &c
- . . projectiles with means to indicate distance traversed. *See* F3A, Ammunition &c
- . . resilience. *See* G1S, Measuring and testing physical properties
- . . sex. *See* A5K, Physiological measuring &c; G4B, Mechanical calculating apparatus
- . . statistics, compiling, sorting, and segregating by means of perforated or profiled cards and sheets. *See* G4M, Reading or sorting data-bearing members
- . . tensions. *See* G1L, Pressure gauges; engine indicators; G1S, Measuring and testing physical properties; G1W, Weighing; dynamometers
- . . thickness of sheets. *See* G1M, Determining dimensions and shapes
- . . time-revolution records. *See* recording (co-ordinate type &c; increment-marking &c)
- . . vehicles, time of running and stoppage of. *See* recording; G1K, Speedometers; movement indicators; G4T, Checking cash, attendances &c
- . . workmen's wages, issuing, indicating, and recording. *See* G4T, Checking cash, attendances &c; G4X, Coins &c
- J14 . . coasting, braking, and driving intervals of power-driven vehicles
- . . feed mechanism for granular and broken materials, output-metering devices for—
- J15 . . . rate-of-output measurements
- J16 . . . total-output measurements
- J35 . . machines, working of, number, output, and time of
- . . . output measurement by means of counters actuated by separate articles manufactured and by means of tallies. *See* G4D, Counting-apparatus
- . . . recording-apparatus. *See* recording *above*
- . . . rest-or-motion indicators and recorders operated by speed-sensitive parts. *See* G1K, Speedometers; movement indicators
- . . . speed and other relative rate indicators and recorders for two quantities (*other than* time-distance and time-revolution recorders). *See* G1K, Speedometers; movement indicators
- . . . speed-sensitive apparatus controlling in-motion time-counters. *See* G1K, Speedometers; movement indicators
- . . . time-alarm signals. *See* G3T, Timing; date indicating
- . . . time-revolution recorders. *See* recording (co-ordinate type &c; increment-marking &c)
- J47 . . rate of generation of steam and other vapours
- J18 . . recording identifying marks on main sheet and detached vouchers in checking systems by a hand tool adapted to mark in duplicate
- J55 . . tilting and inversion of bodies, non-return indicators for
- . . . inversion indicators for extincteurs. *See* A5A, Fire-fighting &c
- mechanical relay and follow-up devices, for giving multiplied and strengthened movement to measurement expressing apparatus—
- J25A . follow-up devices (secondary member moved to re-establish a normal positional relationship to displaced primary member)
- J25C . null or zero-indication devices (force related to movement of secondary member restores displaced primary member to normal position, *e.g.* by opposing or varying displacing force)
- J25B . periodic coupling devices (secondary member periodically moved to a variable extent determined mechanically by position of displaced primary member)
- J25D . unclassified