

SECTION G — PHYSICS

G01 MEASURING; TESTING

G01G WEIGHING

Note(s)

Attention is drawn to the Notes following the title of class G01.

Subclass index

WEIGHING APPARATUS CHARACTERISED BY THE MEANS USED

Mechanical..... 1/00, 3/00
 Fluidic..... 5/00
 Electric, magnetic..... 7/00
 Other..... 9/00

WEIGHING APPARATUS CHARACTERISED BY, OR ADAPTED FOR, THE WEIGHING OF LOADS

HAVING SPECIAL CHARACTERISTICS..... 11/00-19/00
 DETAILS..... 21/00
 AUXILIARY DEVICES..... 23/00

<p>1/00 Weighing apparatus involving the use of a counterweight or other counterbalancing mass</p> <p>1/02 • Pendulum-weight apparatus</p> <p>1/04 • • the pendulum having a fixed pivot axis</p> <p>1/06 • • • with a plurality of pendulums</p> <p>1/08 • • the pendulum having a moving pivot axis, e.g. a floating pendulum</p> <p>1/10 • • • with a plurality of pendulums</p> <p>1/12 • • Constructional arrangements for obtaining equal indicative divisions</p> <p>1/14 • • Temperature-compensating arrangements</p> <p>1/16 • • Means for correcting for obliquity of mounting</p> <p>1/18 • Balances involving the use of a pivoted beam, i.e. beam balances</p> <p>1/20 • • Beam balances having the pans carried below the beam, and for use with separate counterweights</p> <p>1/22 • • • for precision weighing</p> <p>1/24 • • Platform-type scales, i.e. having the pans carried above the beam</p> <p>1/26 • • with associated counterweight or set of counterweights</p> <p>1/28 • • • involving means for automatically lifting counterweights corresponding to the load</p> <p>1/29 • • • • with electrical or electromechanical control means [3]</p> <p>1/30 • • • wherein the counterweight is in the form of a chain</p> <p>1/32 • • • wherein the counterweights are in the form of rider-weights</p> <p>1/34 • • • involving a fixed counterweight, with poise-weights selectively added to the load side</p> <p>1/36 • • • wherein the counterweights are slidable along the beam, e.g. steelyards</p> <p>1/38 • • • • with automatically-driven counterweight</p> <p>1/40 • • specially adapted for weighing by substitution</p>	<p>1/42 • • Temperature-compensating arrangements</p> <p>3/00 Weighing apparatus characterised by the use of elastically-deformable members, e.g. spring balances</p> <p>3/02 • wherein the weighing element is in the form of a helical spring</p> <p>3/04 • • using a plurality of springs</p> <p>3/06 • wherein the weighing element is in the form of a spiral spring</p> <p>3/08 • wherein the weighing element is in the form of a leaf spring</p> <p>3/10 • wherein the torsional deformation of a weighing element is measured</p> <p>3/12 • wherein the weighing element is in the form of a solid body stressed by pressure or tension during weighing</p> <p>3/13 • • having piezo-electric or piezo-resistive properties [3]</p> <p>3/14 • • measuring variations of electrical resistance (G01G 3/13 takes precedence) [3]</p> <p>3/142 • • • Circuits specially adapted therefor [3]</p> <p>3/145 • • • • involving comparison with a reference value (G01G 3/147 takes precedence) [3]</p> <p>3/147 • • • • involving digital counting [3]</p> <p>3/15 • • measuring variations of magnetic properties</p> <p>3/16 • • measuring variations of frequency of oscillations of the body</p> <p>3/18 • Temperature-compensating arrangements</p> <p>5/00 Weighing apparatus wherein the balancing is effected by fluid action</p> <p>5/02 • with a float or other member variably immersed in liquid</p> <p>5/04 • with means for measuring the pressure imposed by the load on a liquid</p> <p>5/06 • • using electrical indicating means [3]</p>
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- 7/00 Weighing apparatus wherein the balancing is effected by magnetic, electromagnetic, or electrostatic action, or by means not provided for in groups G01G 1/00-G01G 5/00**
- 7/02 • by electromagnetic action
 - 7/04 • • with means for regulating the current to solenoids
 - 7/06 • by electrostatic action
- 9/00 Methods of, or apparatus for, the determination of weight, not provided for in groups G01G 1/00-G01G 7/00**
- 11/00 Apparatus for weighing a continuous stream of material during flow; Conveyer-belt weighers**
- 11/02 • having mechanical weight-sensitive devices
 - 11/04 • having electrical weight-sensitive devices
 - 11/06 • having fluid weight-sensitive devices
 - 11/08 • having means for controlling the rate of feed or discharge
 - 11/10 • • by controlling the height of the material on the belt
 - 11/12 • • by controlling the speed of the belt
 - 11/14 • using totalising or integrating devices
 - 11/16 • • being electric or electronic devices [3]
 - 11/18 • • • using digital counting [3]
 - 11/20 • • being mechanical devices [3]
- 13/00 Weighing apparatus with automatic feed or discharge for weighing-out batches of material** (for weighing a continuous stream G01G 11/00; check-weighing G01G 15/00; for fluids G01G 17/04; apportioning by weight materials to be mixed G01G 19/22; combinatorial weighing G01G 19/387) [5]
- 13/02 • Means for automatically loading weigh-pans or other receptacles, e.g. disposable containers, under control of the weighing mechanism
 - 13/04 • • involving dribble-feed means controlled by the weighing mechanism to top up the receptacle to the target weight
 - 13/06 • • • wherein the main feed is effected by gravity from a hopper or chute
 - 13/08 • • • wherein the main feed is effected by mechanical conveying means, e.g. by belt conveyers, by vibratory conveyers
 - 13/10 • • • wherein the main feed is effected by pneumatic conveying means, e.g. by fluidised feed of granular material
 - 13/12 • • Arrangements for compensating for material suspended at cut-off, i.e. for material which is still falling from the feeder when the weigher stops the feeder
 - 13/14 • • Arrangements for determination of, or compensation for, the tare weight of an unloaded container, e.g. of a disposable container
 - 13/16 • Means for automatically discharging weigh receptacles under control of the weighing mechanism
 - 13/18 • • by valves or flaps in the container bottom
 - 13/20 • • by screw conveyers in the weigh receptacle
 - 13/22 • • by tilting or rotating the receptacle
 - 13/24 • Weighing mechanism control arrangements for automatic feed or discharge
 - 13/26 • • involving fluid-pressure systems
 - 13/28 • • involving variation of an electrical variable which is used to control loading or discharge of the receptacle
 - 13/285 • • • involving comparison with a reference value (G01G 13/29 takes precedence) [3]
 - 13/29 • • • involving digital counting [3]
- 13/295 • • • for controlling automatic loading of the receptacle [3]
- 13/30 • • involving limit switches or position-sensing switches
- 13/32 • • • involving photoelectric devices
- 13/34 • • involving mechanical linkage motivated by the weighing mechanism
- 15/00 Arrangements for check-weighing of materials dispensed into removable containers**
- 15/02 • with provision for adding or removing a make-up quantity of material to obtain the desired net weight (dribble-feed means for automatic batch-weighers G01G 13/04)
 - 15/04 • with provision for adding or removing a make-up quantity of material to obtain the desired gross weight (dribble-feed means for automatic batch-weighers G01G 13/04)
- 17/00 Apparatus for, or methods of, weighing material of special form or property** (determining weight by measuring volume G01F)
- 17/02 • for weighing material of filamentary or sheet form
 - 17/04 • for weighing fluids, e.g. gases, pastes
 - 17/06 • • having means for controlling the supply or discharge
 - 17/08 • for weighing livestock
- 19/00 Weighing apparatus or methods adapted for special purposes not provided for in groups G01G 11/00-G01G 17/00**
- 19/02 • for weighing wheeled or rolling bodies, e.g. vehicles
 - 19/03 • • for weighing during motion (G01G 19/04, G01G 19/07 take precedence) [3]
 - 19/04 • • for weighing railway vehicles
 - 19/06 • • • on overhead rails
 - 19/07 • • for weighing aircraft
 - 19/08 • for incorporation in vehicles
 - 19/10 • • having fluid weight-sensitive devices
 - 19/12 • • having electrical weight-sensitive devices
 - 19/14 • for weighing suspended loads (G01G 3/00 takes precedence)
 - 19/16 • • having fluid weight-sensitive devices
 - 19/18 • • having electrical weight-sensitive devices
 - 19/20 • • for weighing unbalanced loads
 - 19/22 • for apportioning materials by weighing prior to mixing them
 - 19/24 • • using a single weighing apparatus
 - 19/26 • • • associated with two or more counterweighted beams
 - 19/28 • • • having fluid weight-sensitive devices
 - 19/30 • • • having electrical weight-sensitive devices
 - 19/32 • • using two or more weighing apparatus
 - 19/34 • • with electrical control means
 - 19/36 • • with mechanical control means
 - 19/38 • • programme controlled, e.g. by perforated tape
 - 19/387 • for combinatorial weighing, i.e. selecting a combination of articles whose total weight or number is closest to a desired value [5]
 - 19/393 • • using two or more weighing units [5]
 - 19/40 • with provisions for indicating, recording, or computing price or other quantities dependent on the weight (indicating means for weighing apparatus G01G 23/18; recording means for weighing apparatus G01G 23/18)
 - 19/41 • • using mechanical computing means

- 19/413 • • using electromechanical or electronic computing means
- 19/414 • • • using electronic computing means only [5]
- 19/415 • • • • combined with recording means [5]
- 19/417 • • with provision for checking computing part of balance
- 19/42 • • for counting by weighing (G01G 19/387 takes precedence) [5]
- 19/44 • for weighing persons
- 19/46 • • Spring balances specially adapted for this purpose
- 19/48 • • Pendulum balances specially adapted for this purpose
- 19/50 • • having additional measuring devices, e.g. for height
- 19/52 • Weighing apparatus combined with other objects, e.g. with furniture (with walking-sticks A45B 3/08)
- 19/54 • • combined with writing implements or paper-knives
- 19/56 • • combined with handles of tools or of household implements
- 19/58 • • combined with handles of suit-cases or trunks
- 19/60 • • combined with fishing equipment, e.g. with fishing rods
- 19/62 • Over or under weighing apparatus [3]
- 19/64 • Percentage-indicating weighing apparatus, i.e. for expressing the weight as a percentage of a predetermined or initial weight [3]

- 21/00 Details of weighing apparatus**
- 21/02 • Arrangements of bearings
- 21/04 • • of knife-edge bearings
- 21/06 • • of ball or roller bearings
- 21/07 • • of flexure-plate bearings [3]
- 21/08 • • Bearing mountings or adjusting means therefor
- 21/10 • • Floating suspensions; Arrangements of shock-absorbers
- 21/12 • • Devices for preventing derangement
- 21/14 • Beams
- 21/16 • • of composite construction; Connections between different beams
- 21/18 • Link connections between the beam and the weigh pan
- 21/20 • • for precision weighing apparatus
- 21/22 • Weigh-pans or other weighing receptacles; Weighing platforms
- 21/23 • Support or suspension of weighing platforms (G01G 21/24 takes precedence) [3]

- 21/24 • Guides or linkages for ensuring parallel motion of the weigh-pans
- 21/26 • Counterweights; Poise-weights; Sets of weights; Holders for the reception of weights
- 21/28 • Frames; Housings
- 21/30 • Means for preventing contamination by dust

- 23/00 Auxiliary devices for weighing apparatus**
- 23/01 • Testing or calibrating of weighing apparatus [3]
- 23/02 • Relieving mechanisms; Arrestment mechanisms
- 23/04 • • for precision weighing apparatus
- 23/06 • Means for damping oscillations, e.g. of weigh-beams
- 23/08 • • by fluid means
- 23/10 • • by electric or magnetic means
- 23/12 • • specially adapted for preventing oscillations due to movement of the load
- 23/14 • Devices for determining tare weight or for cancelling out the tare by zeroising, e.g. mechanically operated (in connection with automatic loading G01G 13/14)
- 23/16 • • electrically or magnetically operated
- 23/18 • Indicating devices, e.g. for remote indication; Recording devices; Scales, e.g. graduated
- 23/20 • • Indicating the weight by mechanical means
- 23/22 • • • combined with price indicators
- 23/24 • • • involving logarithmic scales
- 23/26 • • • Drive for the indicating member, e.g. mechanical amplifiers
- 23/28 • • • involving auxiliary or memory marks
- 23/30 • • • with means for illuminating the scale
- 23/32 • • Indicating the weight by optical projection means
- 23/34 • • • combined with price indicators
- 23/35 • • Indicating the weight by photographic recording
- 23/36 • • Indicating the weight by electrical means, e.g. using photoelectric cells
- 23/365 • • • involving comparison with a reference value (G01G 23/37 takes precedence) [3]
- 23/37 • • • involving digital counting
- 23/375 • • • • during the movement of a coded element [3]
- 23/38 • • Recording or coding devices specially adapted for weighing apparatus
- 23/40 • • • mechanically operated
- 23/42 • • • electrically operated
- 23/44 • • • • Coding devices therefor [3]
- 23/46 • • • Devices preventing recording until the weighing mechanism has come to rest [3]
- 23/48 • Temperature-compensating arrangements (G01G 1/14, G01G 1/42, G01G 3/18 take precedence) [3]