

## 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

**1/00 Weighing apparatus involving the use of a counterweight or other counterbalancing mass [1, 2006.01]**

- 1/02 • Pendulum-weight apparatus [1, 2006.01]
- 1/04 • • the pendulum having a fixed pivot axis [1, 2006.01]
- 1/06 • • • with a plurality of pendulums [1, 2006.01]
- 1/08 • • the pendulum having a moving pivot axis, e.g. a floating pendulum [1, 2006.01]
- 1/10 • • • with a plurality of pendulums [1, 2006.01]
- 1/12 • • Constructional arrangements for obtaining equal indicative divisions [1, 2006.01]
- 1/14 • • Temperature-compensating arrangements [1, 2006.01]
- 1/16 • • Means for correcting for obliquity of mounting [1, 2006.01]
- 1/18 • Balances involving the use of a pivoted beam, i.e. beam balances [1, 2006.01]
- 1/20 • • Beam balances having the pans carried below the beam, and for use with separate counterweights [1, 2006.01]
- 1/22 • • • for precision weighing [1, 2006.01]
- 1/24 • • Platform-type scales, i.e. having the pans carried above the beam [1, 2006.01]
- 1/26 • • with associated counterweight or set of counterweights [1, 2006.01]
- 1/28 • • • involving means for automatically lifting counterweights corresponding to the load [1, 2006.01]
- 1/29 • • • • with electrical or electromechanical control means [3, 2006.01]
- 1/30 • • • wherein the counterweight is in the form of a chain [1, 2006.01]
- 1/32 • • • wherein the counterweights are in the form of rider-weights [1, 2006.01]

- 1/34 • • • involving a fixed counterweight, with poise-weights selectively added to the load side [1, 2006.01]
- 1/36 • • • wherein the counterweights are slidable along the beam, e.g. steelyards [1, 2006.01]
- 1/38 • • • • with automatically-driven counterweight [1, 2006.01]
- 1/40 • • specially adapted for weighing by substitution [1, 2006.01]
- 1/42 • • Temperature-compensating arrangements [1, 2006.01]

**3/00 Weighing apparatus characterised by the use of elastically-deformable members, e.g. spring balances [1, 2006.01]**

- 3/02 • wherein the weighing element is in the form of a helical spring [1, 2006.01]
- 3/04 • • using a plurality of springs [1, 2006.01]
- 3/06 • wherein the weighing element is in the form of a spiral spring [1, 2006.01]
- 3/08 • wherein the weighing element is in the form of a leaf spring [1, 2006.01]
- 3/10 • wherein the torsional deformation of a weighing element is measured [1, 2006.01]
- 3/12 • wherein the weighing element is in the form of a solid body stressed by pressure or tension during weighing [1, 2006.01]
- 3/13 • • having piezo-electric or piezo-resistive properties [3, 2006.01]
- 3/14 • • measuring variations of electrical resistance (G01G 3/13 takes precedence) [1, 3, 2006.01]
- 3/142 • • • Circuits specially adapted therefor [3, 2006.01]
- 3/145 • • • • involving comparison with a reference value (G01G 3/147 takes precedence) [3, 2006.01]
- 3/147 • • • • involving digital counting [3, 2006.01]

- 3/15 • • measuring variations of magnetic properties [1, 2006.01]
- 3/16 • • measuring variations of frequency of oscillations of the body [1, 2006.01]
- 3/18 • Temperature-compensating arrangements [1, 2006.01]
- 5/00 **Weighing apparatus wherein the balancing is effected by fluid action [1, 2006.01]**
- 5/02 • with a float or other member variably immersed in liquid [1, 2006.01]
- 5/04 • with means for measuring the pressure imposed by the load on a liquid [1, 2006.01]
- 5/06 • • using electrical indicating means [3, 2006.01]
- 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 [1, 2006.01]**
- 7/02 • by electromagnetic action [1, 2006.01]
- 7/04 • • with means for regulating the current to solenoids [1, 2006.01]
- 7/06 • by electrostatic action [1, 2006.01]
- 9/00 **Methods of, or apparatus for, the determination of weight, not provided for in groups G01G 1/00-G01G 7/00 [1, 2006.01]**
- 11/00 **Apparatus for weighing a continuous stream of material during flow; Conveyor-belt weighers [1, 2006.01]**
- 11/02 • having mechanical weight-sensitive devices [1, 2006.01]
- 11/04 • having electrical weight-sensitive devices [1, 2006.01]
- 11/06 • having fluid weight-sensitive devices [1, 2006.01]
- 11/08 • having means for controlling the rate of feed or discharge [1, 2006.01]
- 11/10 • • by controlling the height of the material on the belt [1, 2006.01]
- 11/12 • • by controlling the speed of the belt [1, 2006.01]
- 11/14 • using totalising or integrating devices [1, 2006.01]
- 11/16 • • being electric or electronic devices [3, 2006.01]
- 11/18 • • • using digital counting [3, 2006.01]
- 11/20 • • being mechanical devices [3, 2006.01]
- 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) [1, 5, 2006.01]**
- 13/02 • Means for automatically loading weigh-pans or other receptacles, e.g. disposable containers, under control of the weighing mechanism [1, 2006.01]
- 13/04 • • involving dribble-feed means controlled by the weighing mechanism to top up the receptacle to the target weight [1, 2006.01]
- 13/06 • • • wherein the main feed is effected by gravity from a hopper or chute [1, 2006.01]
- 13/08 • • • wherein the main feed is effected by mechanical conveying means, e.g. by belt conveyors or by vibratory conveyors [1, 2006.01]
- 13/10 • • • wherein the main feed is effected by pneumatic conveying means, e.g. by fluidised feed of granular material [1, 2006.01]
- 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 [1, 2006.01]
- 13/14 • • Arrangements for determination of, or compensation for, the tare weight of an unloaded container, e.g. of a disposable container [1, 2006.01]
- 13/16 • Means for automatically discharging weigh receptacles under control of the weighing mechanism [1, 2006.01]
- 13/18 • • by valves or flaps in the container bottom [1, 2006.01]
- 13/20 • • by screw conveyors in the weigh receptacle [1, 2006.01]
- 13/22 • • by tilting or rotating the receptacle [1, 2006.01]
- 13/24 • Weighing mechanism control arrangements for automatic feed or discharge [1, 2006.01]
- 13/26 • • involving fluid-pressure systems [1, 2006.01]
- 13/28 • • involving variation of an electrical variable which is used to control loading or discharge of the receptacle [1, 2006.01]
- 13/285 • • • involving comparison with a reference value (G01G 13/29 takes precedence) [3, 2006.01]
- 13/29 • • • involving digital counting [3, 2006.01]
- 13/295 • • • for controlling automatic loading of the receptacle [3, 2006.01]
- 13/30 • • involving limit switches or position-sensing switches [1, 2006.01]
- 13/32 • • • involving photoelectric devices [1, 2006.01]
- 13/34 • • involving mechanical linkage motivated by the weighing mechanism [1, 2006.01]
- 15/00 **Arrangements for check-weighing of materials dispensed into removable containers [1, 2006.01]**
- 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) [1, 2006.01]
- 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) [1, 2006.01]
- 17/00 **Apparatus for, or methods of, weighing material of special form or property (determining weight by measuring volume G01F) [1, 2006.01]**
- 17/02 • for weighing material of filamentary or sheet form [1, 2006.01]
- 17/04 • for weighing fluids, e.g. gases, pastes [1, 2006.01]
- 17/06 • • having means for controlling the supply or discharge [1, 2006.01]
- 17/08 • for weighing livestock [1, 2006.01]
- 19/00 **Weighing apparatus or methods adapted for special purposes not provided for in groups G01G 11/00-G01G 17/00 [1, 2006.01]**
- 19/02 • for weighing wheeled or rolling bodies, e.g. vehicles [1, 2006.01]
- 19/03 • • for weighing during motion (G01G 19/04, G01G 19/07 take precedence) [3, 2006.01]
- 19/04 • • for weighing railway vehicles [1, 2006.01]
- 19/06 • • • on overhead rails [1, 2006.01]
- 19/07 • • for weighing aircraft [1, 2006.01]
- 19/08 • for incorporation in vehicles [1, 2006.01]
- 19/10 • • having fluid weight-sensitive devices [1, 2006.01]

- 19/12 • • having electrical weight-sensitive devices [1, 2006.01]
- 19/14 • for weighing suspended loads (G01G 3/00 takes precedence) [1, 2006.01]
- 19/16 • • having fluid weight-sensitive devices [1, 2006.01]
- 19/18 • • having electrical weight-sensitive devices [1, 2006.01]
- 19/20 • • for weighing unbalanced loads [1, 2006.01]
- 19/22 • for apportioning materials by weighing prior to mixing them [1, 2006.01]
- 19/24 • • using a single weighing apparatus [1, 2006.01]
- 19/26 • • • associated with two or more counterweighted beams [1, 2006.01]
- 19/28 • • • having fluid weight-sensitive devices [1, 2006.01]
- 19/30 • • • having electrical weight-sensitive devices [1, 2006.01]
- 19/32 • • using two or more weighing apparatus [1, 2006.01]
- 19/34 • • with electrical control means [1, 2006.01]
- 19/36 • • with mechanical control means [1, 2006.01]
- 19/38 • • programme controlled, e.g. by perforated tape [1, 2006.01]
- 19/387 • for combinatorial weighing, i.e. selecting a combination of articles whose total weight or number is closest to a desired value [5, 2006.01]
- 19/393 • • using two or more weighing units [5, 2006.01]
- 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) [1, 2006.01]
- 19/41 • • using mechanical computing means [1, 2006.01]
- 19/413 • • using electromechanical or electronic computing means [1, 2006.01]
- 19/414 • • • using electronic computing means only [5, 2006.01]
- 19/415 • • • combined with recording means [5, 2006.01]
- 19/417 • • with provision for checking computing part of balance [1, 2006.01]
- 19/42 • • for counting by weighing (G01G 19/387 takes precedence) [1, 5, 2006.01]
- 19/44 • for weighing persons [1, 2006.01]
- 19/46 • • Spring balances specially adapted for this purpose [1, 2006.01]
- 19/48 • • Pendulum balances specially adapted for this purpose [1, 2006.01]
- 19/50 • • having additional measuring devices, e.g. for height [1, 2006.01]
- 19/52 • Weighing apparatus combined with other objects, e.g. with furniture (with walking-sticks A45B 3/08) [1, 2006.01]
- 19/54 • • combined with writing implements or paper-knives [1, 2006.01]
- 19/56 • • combined with handles of tools or of household implements [1, 2006.01]
- 19/58 • • combined with handles of suit-cases or trunks [1, 2006.01]
- 19/60 • • combined with fishing equipment, e.g. with fishing rods [1, 2006.01]
- 19/62 • Over or under weighing apparatus [3, 2006.01]
- 19/64 • Percentage-indicating weighing apparatus, i.e. for expressing the weight as a percentage of a predetermined or initial weight [3, 2006.01]
- 21/00 **Details of weighing apparatus [1, 2006.01]**
- 21/02 • Arrangements of bearings [1, 2006.01]
- 21/04 • • of knife-edge bearings [1, 2006.01]
- 21/06 • • of ball or roller bearings [1, 2006.01]
- 21/07 • • of flexure-plate bearings [3, 2006.01]
- 21/08 • • Bearing mountings or adjusting means therefor [1, 2006.01]
- 21/10 • • Floating suspensions; Arrangements of shock-absorbers [1, 2006.01]
- 21/12 • • Devices for preventing derangement [1, 2006.01]
- 21/14 • Beams [1, 2006.01]
- 21/16 • • of composite construction; Connections between different beams [1, 2006.01]
- 21/18 • Link connections between the beam and the weigh pan [1, 2006.01]
- 21/20 • • for precision weighing apparatus [1, 2006.01]
- 21/22 • Weigh-pans or other weighing receptacles; Weighing platforms [1, 2006.01]
- 21/23 • Support or suspension of weighing platforms (G01G 21/24 takes precedence) [3, 2006.01]
- 21/24 • Guides or linkages for ensuring parallel motion of the weigh-pans [1, 2006.01]
- 21/26 • Counterweights; Poise-weights; Sets of weights; Holders for the reception of weights [1, 2006.01]
- 21/28 • Frames; Housings [1, 2006.01]
- 21/30 • Means for preventing contamination by dust [1, 2006.01]
- 23/00 **Auxiliary devices for weighing apparatus [1, 2006.01]**
- 23/01 • Testing or calibrating of weighing apparatus [3, 2006.01]
- 23/02 • Relieving mechanisms; Arrestment mechanisms [1, 2006.01]
- 23/04 • • for precision weighing apparatus [1, 2006.01]
- 23/06 • Means for damping oscillations, e.g. of weigh-beams [1, 2006.01]
- 23/08 • • by fluid means [1, 2006.01]
- 23/10 • • by electric or magnetic means [1, 2006.01]
- 23/12 • • specially adapted for preventing oscillations due to movement of the load [1, 2006.01]
- 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) [1, 2006.01]
- 23/16 • • electrically or magnetically operated [1, 2006.01]
- 23/18 • Indicating devices, e.g. for remote indication; Recording devices; Scales, e.g. graduated [1, 2006.01]
- 23/20 • • Indicating the weight by mechanical means [1, 2006.01]
- 23/22 • • • combined with price indicators [1, 2006.01]
- 23/24 • • • involving logarithmic scales [1, 2006.01]
- 23/26 • • • Drive for the indicating member, e.g. mechanical amplifiers [1, 2006.01]
- 23/28 • • • involving auxiliary or memory marks [1, 2006.01]
- 23/30 • • • with means for illuminating the scale [1, 2006.01]
- 23/32 • • Indicating the weight by optical projection means [1, 2006.01]
- 23/34 • • • combined with price indicators [1, 2006.01]
- 23/35 • • Indicating the weight by photographic recording [1, 2006.01]
- 23/36 • • Indicating the weight by electrical means, e.g. using photoelectric cells [1, 2006.01]
- 23/365 • • • involving comparison with a reference value (G01G 23/37 takes precedence) [1, 3, 2006.01]

## G01G

- 23/37 • • • involving digital counting [**1, 2006.01**]
- 23/375 • • • • during the movement of a coded element [**3, 2006.01**]
- 23/38 • • Recording or coding devices specially adapted for weighing apparatus [**1, 2006.01**]
- 23/40 • • • mechanically operated [**1, 2006.01**]
- 23/42 • • • electrically operated [**1, 2006.01**]
- 23/44 • • • • Coding devices therefor [**3, 2006.01**]
- 23/46 • • • Devices preventing recording until the weighing mechanism has come to rest [**3, 2006.01**]
- 23/48 • Temperature-compensating arrangements (G01G 1/14, G01G 1/42, G01G 3/18 take precedence) [**3, 2006.01**]