bent at its edge or edges, and secured within a suitable groove or grooves by metal run or pressed therein, substantially as set forth. 18th. In an hydraulic pressure support, a continuous diaphragm 54, permanently secured to the base 52, or its lining 53, and separable from the pressure column 51. 19th. In a liquid pressure support, the combination of a lining plate 53 and a conducting plug 55 fixed thereto, substantially as set forth. 20th. The combination of a lining plate 53 and conducting plug 55 fixed thereto, and a nipple 56 attached to a conducting pipe 56*a*, and connecting with the conducting plug through a lateral opening, substantially as set forth. 21st. The combination of a liquid pressure pipe 56*a* leading from an hydraulic support or reducer, a pressure chamber 53, 54, and a coupling and sealing plug 56 for connecting them as herein set forth. 22nd. In a hydraulic scale, a plug, or pipe socket with a vent 34 permitting the escape of air while the plug is entering as explained. 23rd. In combination with the pressure-column of a scale, or reducer, one or more transmitting pressure-chambers separably removable, and each consisting of a chambered piece 23, diaphragm 25, ring 26 and a small pressure-column 24 which transmits pressure to the said scale or reducer-column either directly or through the medium of one or more intervening levers. 24th. A pressure-reducer constructed of a base 223, one or more liquid pressure-supports 222 thereon, a column 230, for transmitting pressure to the weigh-beam and one or more levers 305 fulcrumed on flexible plate connections 298 and transmitting reduced pressure from the said liquid pressure-supports, to the said weigh-beam column, substantially as set forth. 25th. A pressure-reducer constructed of a base 223, two or more pressure-columns 307 and a stay-plate or plates 308 connecting the pressure-columns at the opposite sides of the base, to fix them against horizontal while permitting free vertical motion, substantially as set forth. 26th. A gauge or scale reducer 60 secured to the base 66 of a weigh-case, in combination with a pressure-column 59, substantially as set forth. 27th. In a weighing machine gauge, or dynamometer, the combination of a flexible fulcrum-plate 298 or 306 with a fulcrum block 296 or a pressure-column 307 and a lever 305, or with two levers, said parts having grooves adapted to receive and hold the said fulcrums-plate, as set forth. 28th. In a weighing machine gauge or dynamometer, a flexible fulcrum-plate 298 secured by forcing it at either and under pressure into a groove forming a seat for it, substantially as and for the purposes set forth. 29th. The combination, with a beam 72 provided with one or more weighing weights 192, of a supplemental weight-rod 90 carrying one or more balance-weights 88, 89, as and for the purposes set forth. 30th. The combination of the beam-supporting pillar 71, formed with a horizontally projecting lug, the weigh-beam 72 having a heel projecting beneath said lug and a flexible fulcrum-plate 73 connecting the said weigh-beam and its supporting pillar and receiving compression in the act of weighing. 31st. In a weighing machine, the combination of the weigh-beam 72, and an indicator 84 having greater angular motion than said beam. 32nd. The combination with a weigh-beam 72 of an indicator rod 84 having greater angular motion than said beam, and a weight 86 counterbalancing said indicator rod, substantially as set forth. 33rd. The combination, with one or more weigh-beams or levers 72, of an indicator rod 84 connected to one of said beams or levers by one or more flexible fulcrum-plates 85, and having greater angular motion than the beam or lever to which it is connected. 34th. The combination of the indicator rod 84 longitudinally adjustable in its holding block 83, and the thin attaching plates 83, 85, as and for the purpose set forth. 35th. The combination, with the scale-frame and weigh-beam, of an indicator rod 84 working in front of an indicator-plate, and on or within a guide 184, said indicator-plate and guide being attached either to the frame or beam or one to each, as preferred. 36th. In combination, with the weigh-beam 72, a movable weight-rod 110 and supporting bar or frame 118 having suitable projections to support a plurality of weights 114 and apply them in succession to the beam, substantially as set forth. 37th. The combination of a suspension-bar or rod 110 and a weight supporting-bar or frame 118, each having suitable projections so that a movement of the weight-supporting bar or frame relatively to the beam or suspension rod will cause a successive application or removal of the weights. 38th. The construction of the weight-supporting bar or frame 118, and the suspension-rod 110, with cones or projections at different distances asunder, so as to cause a successive application or removal of the weights, as explained. 39th. A weighing machine having a weight-elevating platform bar or frame 100, 118 and primary and secondary levers 103, 121, 156, etc., with suitable connections for operating the same. 40th. In a weighing machine, the combination, with a weight-operating lever, of a guiding and sustaining friction-box 162 and fixing rod 133 for retaining the said lever in any position in which it is set. 41st. In a weighing machine, a weight-operating bar and lever 121 applying a greater or less number of weights according to the extent of its movement, in combination with a differential counterweight 167, having a varying effect on the weight operating bar in proportion to the amount of the weighing weights supported thereby. 42nd. In a weighing machine, a weight-operating bar 118 and lever 121, provided with a pointer 158 and scale 107, to indicate the number or value of the weights applied to the scale-beam. 43rd. A double weigh-beam case 197, 198 constructed substantially as herein set forth. 44th. A track scale platform constructed with longitudinal and transverse beams 203, 206 and held against longitudinal and lateral motion by stay-plates, or rods 215, as herein shown and described. 45th. In a railway track scale, a load-platform 203, 204, 206, sections resting by their ends independently on the platform supports 2, as herein explained. 46th. The combination, with one or more hydraulic pressure-supports 2, of an intermediate load frame 206, 212 fixed against horizontal motion and a separate load-platform 203, 204, as and for the purpose set forth. 47th. A railway track-scale constructed with a sectional platform 203, 204 resting on hydraulic pressure-supports 2 connected in pairs with a pressure reducer 16, from which pressure is communicated to the weigh-beam connections by a pipe or pipes 32 common to two or more primary pressure-supports.

No. 20,506. Lever Platform Scale.

(Balance Bascule à Levier.)

The Emery Scale Company, Stamform, Ct., (assignee of Albert H. Emery, New York, N.Y.,) U.S., 4th November, 1884; 15 years.

Claim.—1st. The combination, with a scale-platform 5, and its levers 32, 33, of thin flexible plates 64, 65, clamped to and directly connecting the said platform and levers, as and for the purposes set forth. 2nd. The combination, with the platform 5, platform lever or levers 32, 33, and the frame or bed 66, of a scale of flexible stay-plates 83 to stay the said platform against horizontal motion, as explained. 3rd. The combination, with the platform lever 32, of adjustable stop-screws 72, abutting against the frame or bed 66, or one or more lugs 66*a* on the said bed to stay the lever against lateral motion. 4th. In combination with the platform levers 32, 33, and the scale-frame or bed 66, the thin flexible plate-fulcrums 67, 68 offering such slight resistance that a small fraction of the full load of the scale will deflect the levers to the extent of their permitted movement. 5th. In a platform scale, the lever or levers 32, 33 having thin flexible plate fulcrums 64, 65 67, 68, 71, in combination with weighing mechanism 87, extraneous to said fulcrums. 6th. The combination of primary platform levers 32, and secondary platform levers 33 connected by thin flexible plate-fulcrums 71 offering such slight resistance that a small fraction of the full load of the scale will deflect the levers to the extent of their permitted movement, substantially as set forth. 7th. The hollow pillar 11, provided with flanges 74, 75, in combination with the bed 66 and weigh-beam case 77, as and for the purposes set forth. 8th. A platform-scale constructed with a bed 66, supporting a platform 5, through the medium of levers 32, 33 and flexible plates 64, 65 a case or head 77, a weigh-beam 87, contained in said case or head, a flanged hollow pillar 11 connecting the platform bed and weigh-beam case and flexible transmitting plates 71, 69 connecting the platform levers to one another and to the weigh beam. 9th. The combination of the scale platform 5, levers 32, 33, supporting the same, the weigh beam 87 and a column 34 connecting the said levers and weigh beam stayed against lateral motion, substantially as described. 10th. The combination, with the scale beam 87 and its case or frame 77, of a pair of adjustable stop screws 112, 113, to limit the vertical movement of the beam in either direction. 11th. The combination of the scale platform 5, the levers 32, 33, supporting the same, flexible fulcrum plates 67, 68, 71, supporting and connecting said levers, a column 34 transmitting movement to the weigh beam and suitable stay plates 83, to secure the mechanism against horizontal movement. 12th. The scale beam or lever 32, stayed against horizontal movement by one or more flexible plates 83, attached to it and to another part of the scale. 13th. The weigh beam 87 and weight rod 93, connected by a strap 94 within an opening in the weigh beam case, serving to limit the movement of the parts. 14th. The combination of one or more scale levers 32, 33 and a flexible fulcrum plate or plates 67, 71 connecting either of said levers to another part of the scale, and secured by a clamp and a gauging shoulder, substantially as described.

No. 20,507. Pressure and Vacuum Gauge and Dynamometer. *(Indicateur à Pression et a Vide et Dynamomètre.)*

The Emery Scale Company, Stamford, Ct., (assignee of Albert H. Emery, New York, N.Y.,) U.S., 4th November, 1884; 5 years.

Claim.—1st. A pressure gauge, or dynamometer, constructed with a pressure column 8, a pressure diaphragm 7 and a sealing plug or cap 5, securing the margin of the diaphragm and forced home by a coupling or clamp screw 4, substantially as herein set forth. 2nd. In a pressure gauge or weighing dynamometer, a pressure column 8, acting through a lever, or system of levers 13, 18, 23 on a rotary indicator 31, substantially as described. 3rd. In pressure gauge or dynamometer, the combination of a pressure-column 8, one or more transmitting levers 13, 18, 23 to take up the load, one or more flexible load transmitting plates 13 connecting the said parts, substantially as described. 4th. In a gauge or weighing dynamometer, a pressure column 8, one or more transmitting levers 13, 18, 23, an indicator 31, and a setting rod 38 connected, with one of the transmitting levers through the medium of a spring 36, for the purpose of regulating the resistance of the spring or adjusting the position of the indicator without opening the case. 5th. In a gauge or weighing dynamometer, one or more load-transmitting levers 13, 18, 23 connected to a moving part and to the case by flexible fulcrum plates 12, 27, 21, 14, 19, 24. 6th. In a gauge or weighing dynamometer, a load-pressure column 8, a rotary indicator 31, and one or more transmitting levers 13, 18, 23 attached to a fixed of the instrument, and to each other by flexible fulcrum plates. 7th. In a gauge or dynamometer, the combination, with a transmitting or indicating lever 23, of one or more weighted arms 27 extending above or below said lever, so as to offer a varying resistance to the pressure, substantially as set forth. 8th. In a gauge or dynamometer, the combination, with a transmitting or indicating lever 23, of a weight 26 mounted on an arm 27 projecting from the said lever and adjustable vertically, or horizontally, or both, so as to balance the levers and ther connections or to offer a varying resistance thereto in different positions, as set forth. 9th. The combination, in a pressure or vacuum gauge or weighing dynamometer, of a pressure column 8, one or more transmitting levers 13, 18, 23, one or more flexible connecting plates 12, 17, 21, a transmitting band 28 and a rotary indicator 31, substantially as set forth. 10th. In a pressure or vacuum gauge or weighing dynamometer, a transmitting lever 23 constructed with an upwardly projecting heel 22 to afford attachment for the moving fulcrum-plate 21 above the level of the attachment of the fixed fulcrum-plate 24, substantially as and for the purposes set forth.

No. 20,508. Weighing Machine and Dynamometer. *(Machine à Peser et Dynamomètre.)*

The Emery Scale Company, Stamford, Ct., (assignee of Albert H. Emery, New York, N.Y.,) U.S., 4th November, 1884; 5 years.

Claim.—1st. In a dynamometer or weighing machine, the pair of beams 2, 6, and rods 5 connecting them, constituting a rigid suspension yoke and supporting a case 3, capable of limiting vertical motion relatively to the said yoke. 2nd. In a dynamometer or weighing machine, a casing 3 and a suspension yoke 2, 5, 6, connected by flexible plates 4, 7, to prevent lateral while permitting vertical