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No. 830,976.

PATENTED SEPT. 11, 1906.

A. DE VILBISS, JR.  
COMPUTING SCALE.  
APPLICATION FILED MAY 21, 1900.

Fig. 1.

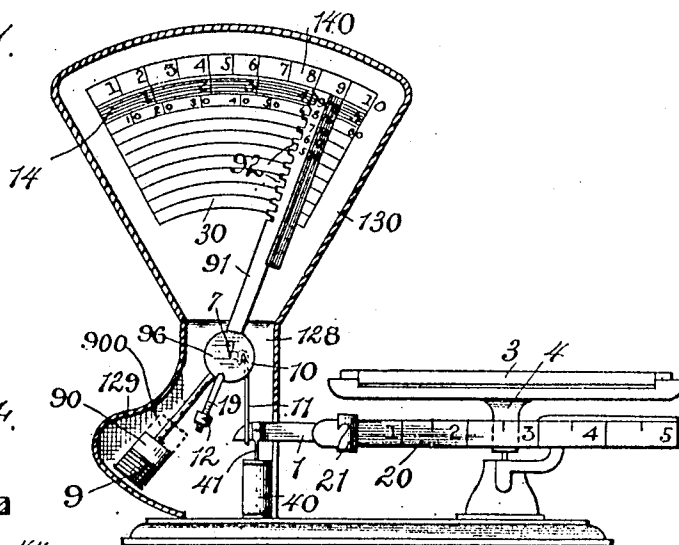


Fig. 4.

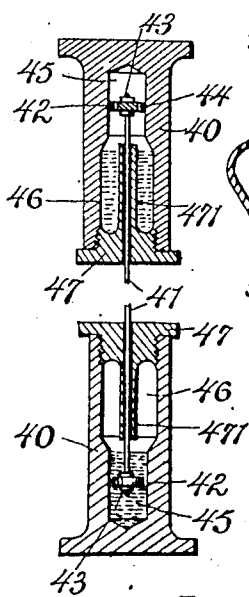


Fig. 2.

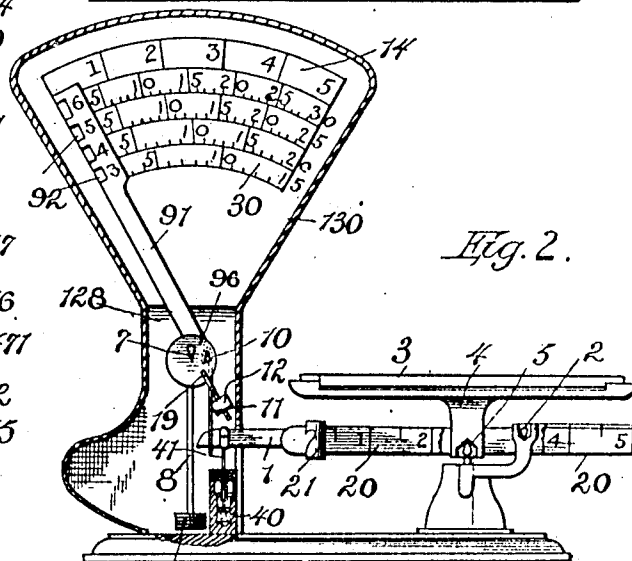


Fig. 3.

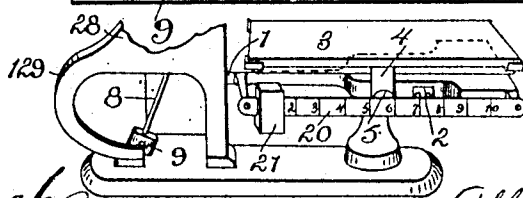


Fig. 5.

WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

ALLEN DE VILBISS, JR., OF TOLEDO, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO TOLEDO COMPUTING SCALE COMPANY, A CORPORATION OF NEW JERSEY.

## COMPUTING-SCALE.

No. 830,976.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed May 21, 1900. Serial No. 17,411.

*To all whom it may concern:*

Be it known that I, ALLEN DE VILBISS, JR., a citizen of the United States, and a resident of Toledo, Lucas county, State of Ohio, have invented certain new and useful Improvements in Computing-Scales, (Case N;) and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims particularly specifying the novelty.

This invention relates to scales of that class which compute or indicate the total weight and total price by a hand standing normally at "0," but moved over the table by the load and coming to rest when the same is counterbalanced; and the objects of the same are to simplify the construction of such a scale; to render possible the use of a tare beam and weight in connection therewith, and to provide a liquid-brake for preventing undue vibration of the hand.

The present invention is an improvement in both these respects and in other details over my Patent (Case A) No. 621,297 and issued March 14, 1899, and it is adapted to the constructions shown in and yet is an improvement over my two companion applications, of which one (Case B) bears Serial No. 703,253 and was filed January 24, 1899, and the other (Case H) bears Serial No. 737,770 and was filed November 21, 1899, and allowed January 24, 1900, the principal improvement over both these cases consisting in omitting the counterbalance opposite the link-pivot and using an improved form of liquid-brake.

The following specification describes, briefly, the general construction and operation and at greater length the improvements and their advantages, all as illustrated in the accompanying drawings, whereir -

Figure 1 is a sectional view through one type of my scale, showing the hand as moved to eight pounds and the tare-beam complete. Fig. 2 is a similar sectional view through another type of my scale, showing the hand at "0." Figs. 3 and 4 are enlarged sectional views of the liquid-brake, the latter showing what occurs when the device is inverted, as in transportation, and also illustrating a slight modification of the piston. Fig. 5 is a perspective detail of the base, the fulcrum, the beam, and the lower portion of the casing.

1 is the main scale-beam, fulcrumed at 2 on a support which rises from the base, and 3 is a pan or platform having a standard 4, pivotally supported, as at 5, upon said beam. The base supports a casing consisting of an upright body portion 128 (preferably having a lateral extension 129) and provided with a housing 130, open at its front to expose a table 30, which is marked on its face with several rows of price-totals and near its upper edge with a single row of weight-totals 14 in Fig. 2 and with an additional row of weight-totals 140 in Fig. 1, the two rows when used being differently colored.

Mounted on knife-edge bearings 7 within the body portion of the casing is a disk 96, from which hangs rigidly a pendulum 8, having a fixed weight 9 at its lower end. In Fig. 1 this weight is colored to correspond with one of the rows of weight-totals, and there is an additional removable weight 90 of the other color, and there may be a second removable weight 900. Fixed to and rising from the disk obliquely to the pendulum is a hand or index 91, preferably having notches 92 in its active face, adjacent which are numerals to coact with the several lines of price-totals. In Fig. 1 there are two rows of these numerals opposite the notches, and the rows are colored to correspond with the two rows of weight-totals and the two weights on the pendulum. Projecting from the disk diametrically opposite the center of gravity of the hand is a screw 19, on which is an adjustable nut 12, forming a counterbalance for the weight which the hand possesses when it stands oblique. In the disk at a point between the screw and the hand is a knife-pivot 10, whose edge is normally above that of the central pivot 7 when the pendulum is vertical and over which hangs a link 11, that extends downward and is connected with the scale-beam.

20 is a tare-beam moving in unison with the main beam and preferably extending past both pivots 2 and 5. The tare-beam may have figures marked thereon, as shown, and 21 is the tare-weight.

40 is a cylinder (see Fig. 3) mounted by preference within the body portion of the casing about where shown, and 41 is a rod pivoted to the scale-beam and supporting a piston 42, which may be adjustable, as by

nuts 43, located above and below the same. Interiorly the cylinder at its lower end forms a dash-pot 45 of relatively smaller capacity and at its upper end a chamber 46 of relatively larger capacity. 47 is a cover closing the upper end of the cylinder, and hence of the chamber, and 471 is a nipple depending rigidly from this cover into the chamber and nearly to the bottom thereof, which is the top of the dash-pot. The cover and nipple are pierced with an opening, through which loosely passes the rod 41, and the piston 42 is either somewhat smaller in diameter than the dash-pot, as seen in Fig. 3, or it may have openings 44 through its body, as seen in Fig. 4. Either or any equivalent construction permits passage through or by the piston of oil or other liquid with which the dash-pot is evenly filled. When a scale containing this form of cylinder is inverted, the liquid runs out of the dash-pot into the chamber, whose capacity around the nipple is greater than that of the dash-pot. Hence the liquid then stands as seen in Fig. 4, and the necessity for packing around the rod is obviated.

The weight 12 counterbalances the hand 91, the pendulum with its weight or weights hangs normally vertical and swings outward into the extension 129 as the disk 96 turns on its pivot 7, and the other parts are so arranged and proportioned that when the tare-weight is at "0" they are exactly counterbalanced over the fulcrum 2. When a load is placed on the platform, the inner end of the beam 1 descends, the link 11 turns the disk, and the hand 91 moves over the table, while the pendulum rises and gains weight sufficient to balance the load. Meanwhile the piston descends in the liquid, and the density of the latter causes the hand to come quickly to rest. Had the load been lard, for instance, the grocer would have first placed a crock on the platform and immediately moved the tare-weight 21 until the hand returned to "0" from the point to which the weight of the crock had moved it. Thereafter the weighing of the commodity proceeds as above described.

In Fig. 2 the row 14 gives the total of weight, the figures on the hand are the price per pound, and the figure in the table 30, which is exposed through the notch 92 opposite the proper price per pound, is the total price. In Fig. 1 the same is true with the shaded row 14, the shaded figures on the hand, and the fixed weight 9; but when the light weight 90 is added the hand will move to a less degree and the light row 140 and figures on the light portion of the hand must be used, the price-totals still being found in the proper notches. The additional weight 900 increases the capacity beyond the limits of total figures, as by doubling them, and when this weight is used those totals must be mentally doubled.

What is claimed as new is—

1. In a scale, the combination with the main beam having fulcrums mounted on a support, the pan or platform pivotally supported upon and carried by the main beam, and means for reducing vibration of said beam; of an auxiliary or tare beam connected and moving with the main beam and located beneath the pan or platform, a tare-weight thereon, and means connected with the main beam for automatically offsetting the weight of the load.

2. In a scale, the combination with the main beam having fulcrums mounted on a support, the pan or platform pivotally supported upon and carried by the main beam, and means for reducing vibration of said beam; of an auxiliary or tare beam connected and moving with the main beam and located beneath the pan or platform and extending past the main fulcrum, a tare-weight thereon, and means connected with the main beam for automatically offsetting the weight of the load.

3. In a scale, the combination with the computing-table, the main beam mounted on fulcrums carried by a support rising from the base, a supplemental or tare beam connected therewith, a tare-weight thereon, and a pan or platform carried by the main beam; of a hand and pendulum rigid with each other and mounted on a knife-edge pivot common to both, and connections between one beam and a point rigid with said hand normally above its pivot, whereby the hand is moved over the table to a degree corresponding with the depression of the pan, substantially as described.

4. In a scale, the combination with the computing-table, the main beam mounted on fulcrums carried by a support rising from the base, a supplemental or tare beam connected therewith, a tare-weight thereon, a pan or platform carried by the main beam, and means for offsetting the weight of the load; of a disk mounted on a supporting-pivot of knife-edges, a hand projecting rigidly from the disk and coacting with the table, a counterbalance for the hand projecting from the opposite side of the disk, and a link connecting one beam with a point on the disk normally above the supporting-pivot of said disk, substantially as described.

5. In a scale, the combination with the main beam having fulcrums mounted on a support rising from the base, a pan or platform carried by said beam, means for offsetting the weight of the load, an upright cylinder containing a dash-pot, and a nipple extending downward from the upper end thereof; of a rod connected with a moving part of the scale mechanism and passing loosely through the nipple, and a piston on the rod moving within the dash-pot, as and for the purpose set forth.

6. In a scale, the combination with the main beam having fulcrums mounted on a support rising from the base, a pan or platform carried by said beam, means for offsetting the weight of the load, an upright cylinder containing a dash-pot, and a removable cover therefor having a nipple extending downward; of a rod connected with the scale-beam and passing loosely through the cover and nipple, and a piston on the rod moving within the dash-pot, as and for the purpose set forth.

7. In a scale, the combination with an upright cylinder containing at its lower end a dash-pot and at its upper end a chamber, and a removable cover therefor having a nipple extending downward into said chamber, which latter around said nipple is of no less capacity than said dash-pot; of a rod connected with a moving part of the scale mechanism and passing loosely through the nipple and cover, and a piston on the rod moving within the dash-pot, all substantially as described.

8. In a scale, the combination with an upright cylinder having at its upper end a chamber and at its lower end a dash-pot filled with liquid, and a cover for the cylinder having a nipple extending into the chamber, the ca-

capacity of the latter around said nipple being greater than that of the dash-pot; of a rod connected with a moving part of the scale mechanism and extending downward through said nipple, and a perforated piston adjustably mounted on the rod and standing within the dash-pot, substantially as described.

9. In a scale, the combination with an upright cylinder having at its upper end a chamber and at its lower end a dash-pot filled with liquid; and a cover for the cylinder having a nipple extending into the chamber, the capacity of the latter around said nipple being greater than that of the dash-pot; of a rod connected with a moving part of the scale mechanism and extending downward through said nipple, a piston mounted on the rod and standing within the dash-pot, and nuts on said rod above and below the piston for adjusting the latter, substantially as described.

In testimony whereof I have hereunto subscribed my signature this the 13th day of April, A. D. 1900.

ALLEN DE VILBISS, Jr.

Witnesses:

L. W. RAKESTRAW,  
JAMES R. SMITH.