

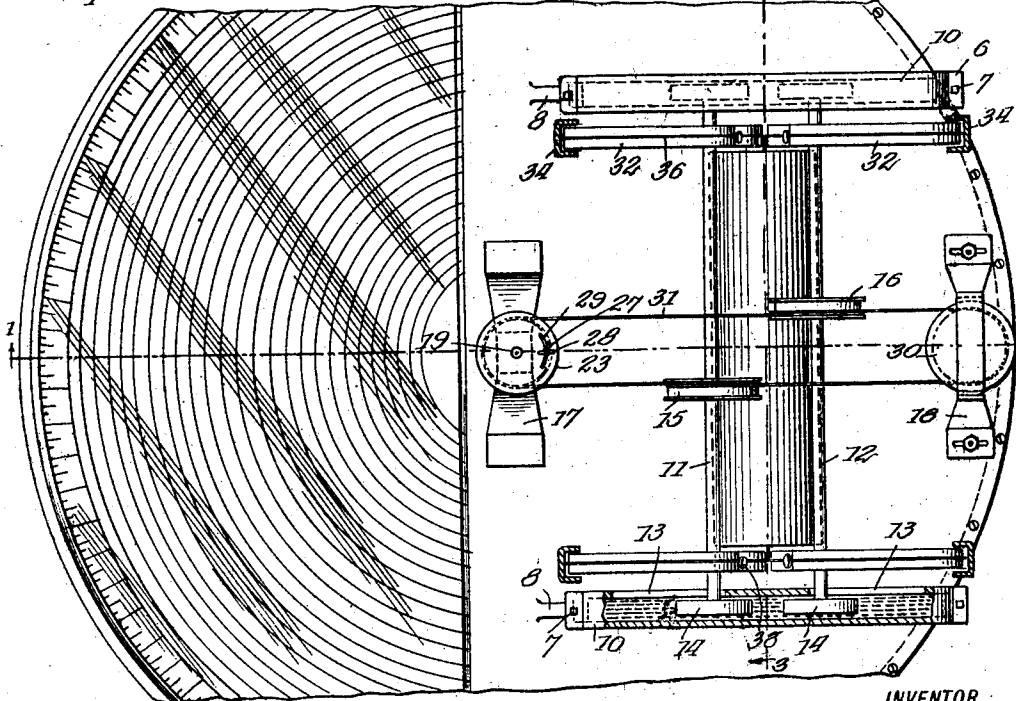
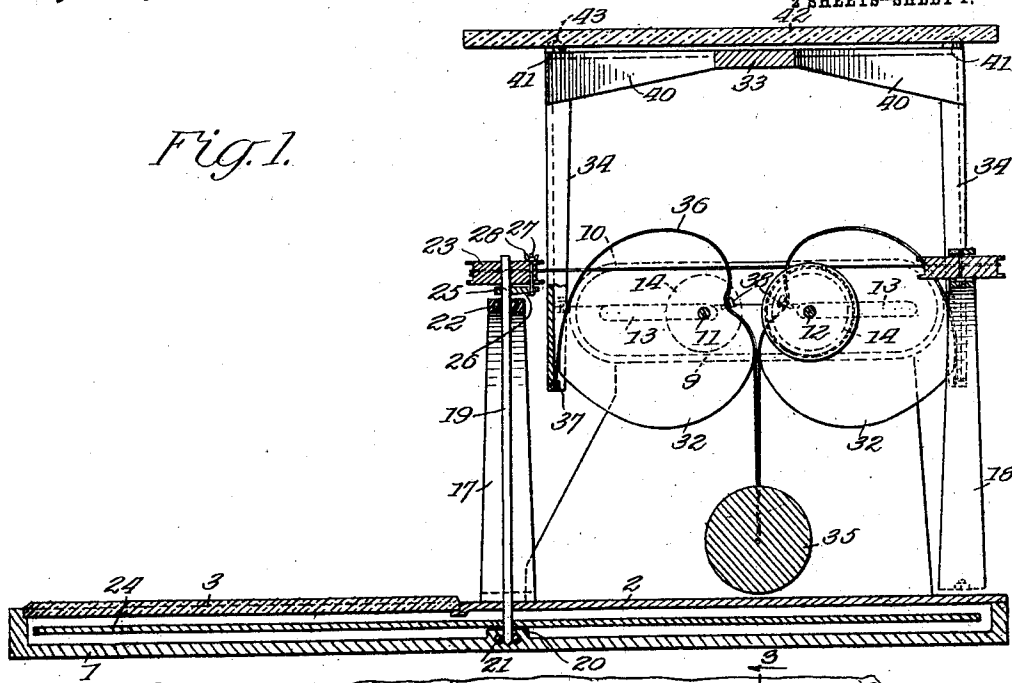
E. PIERSON.
 ECCENTRIC BALANCE COMPUTING SCALE.
 APPLICATION FILED NOV. 28, 1912.

1,061,116.

Patented May 6, 1913.

2 SHEETS-SHEET 1.

Fig. 1.



WITNESSES
 S. E. Wade.
 C. E. Trimmer

Fig. 2.

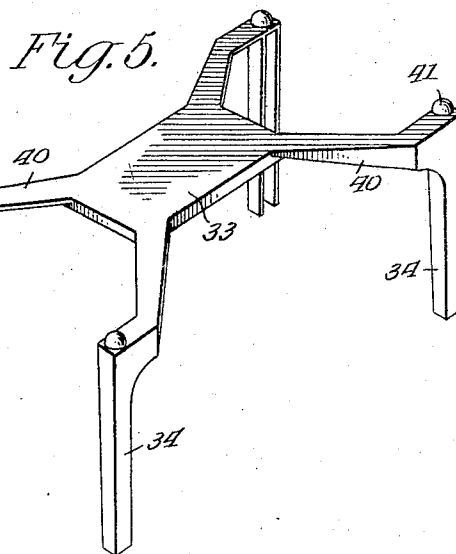
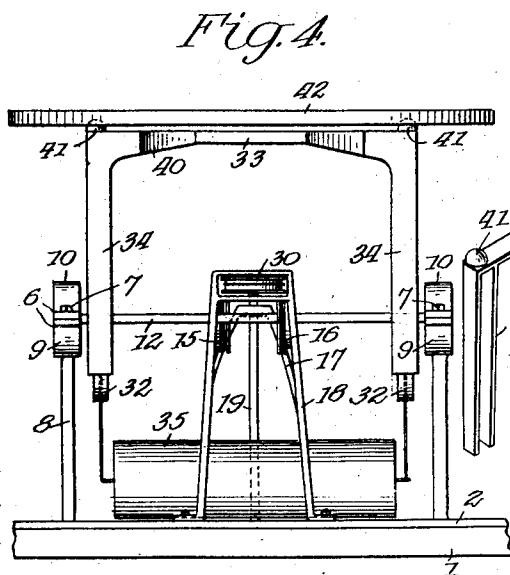
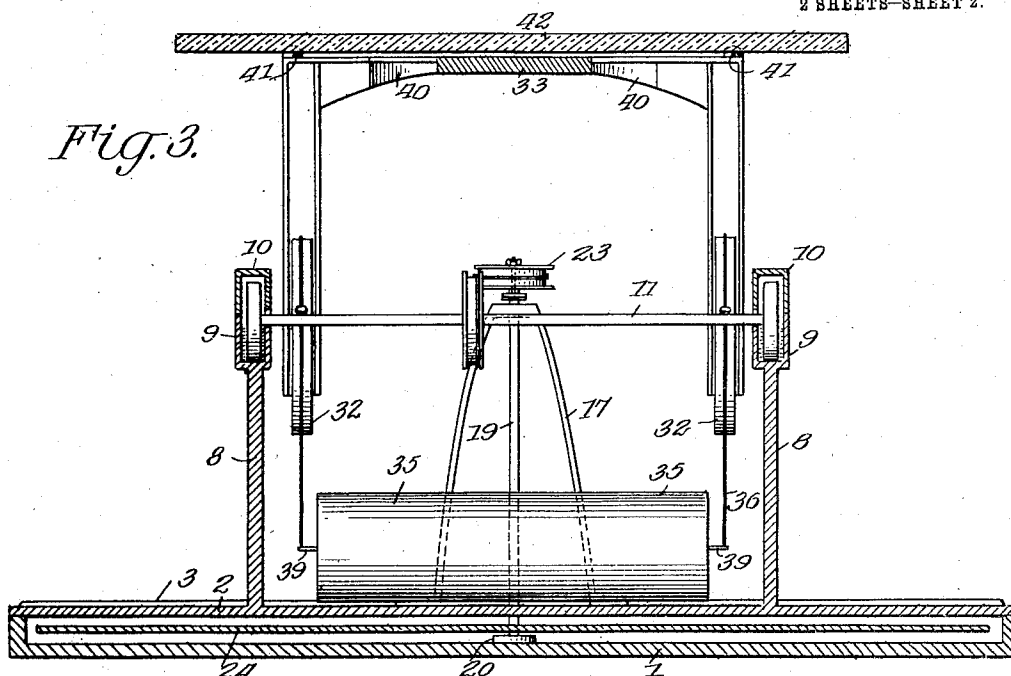
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 BY *Mum*
 ATTORNEYS

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UNITED STATES PATENT OFFICE.

EDWARD PIERSON, OF ROLLWITZ, NEBRASKA.

ECCENTRIC-BALANCE COMPUTING-SCALE.

1,061,116.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed November 26, 1912. Serial No. 733,614.

To all whom it may concern:

Be it known that I, EDWARD PIERSON, a citizen of the United States, and a resident of Rollwitz, in the county of Dundey and State of Nebraska, have invented a new and useful Improvement in Eccentric-Balance Computing-Scales; of which the following is a specification.

My invention is an improvement in eccentric balance computing scales, and has for its object the provision of simple, easily operated means for weighing an article, and for indicating not only the weight of the said article, but also the price of the same in money.

In the drawings:—Figure 1 is a section on the line 1—1 of Fig. 2, Fig. 2 is a plan view with the platform removed, Fig. 3 is a section on the line 3—3 of Fig. 2, Fig. 4 is a rear view, and Fig. 5 is a perspective view of the supporting frame for the platform.

The present embodiment of the invention comprises a support composed of a cup shaped base 1 and a top 2, the top being secured to the base in any suitable manner and the said top is provided with an opening at its front in which is seated a segmental plate 3 of transparent material, as for instance, heavy plate glass.

A cheek piece or plate 8 is arranged at each side of the support, the said plates being in spaced relation transversely, and each of the said plates is provided with one section 9, the lower, of a casing at its upper edge, the casing being completed by a cover 10. The sections 9 and 10 of the casing are provided with longitudinally extending lugs 6 at their ends, and screws 7 are passed through the lugs for securing the sections together.

A pair of shafts 11 and 12 are arranged transversely of the support, and the ends of the shafts extend through slots 13 in the inner sides of the casings, and are provided with wheels or rollers 14 in the said casings. The casings or housings 9—10 are partially filled with oil or glycerin, and the wheels or rollers 14 move in the glycerin, being thus prevented from contact with dust or other foreign substances which might obstruct the perfect movement of the wheels or rollers. The housings or casings are of slightly greater width than the thickness of the rollers, so that the said wheels or rollers may move freely in the casings.

The shaft 11 is provided with a grooved

wheel 15 intermediate its ends, and the shaft 12 is provided with a similar wheel 16, offset laterally from the wheel 15. Brackets 17 and 18 of approximately U-shape are arranged on the upper face of the base, the said brackets being on opposite sides of the shafts 11 and 12, and a shaft 19 is journaled in vertical position in the bracket 17, the lower end of the shaft being engaged with a stepped bearing 20 on the upper face of the bottom of the base, and rollers 21 are arranged between the shaft and the bearing. Other rollers 22 are arranged between the shaft and the bearing in the body of the bracket, and a grooved wheel or pulley 23 is journaled on the upper end of the shaft. A dial 24 is secured to the shaft within the base, the upper face of the dial appearing through the sheet 3 and the said upper face is provided with computations.

The wheel 23 is loose on the shaft 19, and the said shaft is provided with a polygonal portion below the roller as shown at 25. An arm 26 is provided with an opening at one end fitting the polygonal portion of the shaft, and the other end of the arm extends radially of the roller. A bolt 27 is passed through the outer end of the arm and through an arc-shaped slot 29 in the wheel or pulley, and a wing nut 28 is engaged with the upper end of the bolt. It will be evident that by loosening the nut the wheel or pulley may be turned angularly with respect to the arm 26. A wheel or pulley 30 is journaled in the bracket 18, in horizontal position, and in register with the wheel 23, and a belt 31 is supported by the said wheels 23 and 30, one run of the belt encircling the wheel 15 on the shaft 11, while the other run of the belt encircles the wheel 16 of the shaft 12.

A pair of heart-shaped wheels 32 is secured to each of the shafts 11 and 12, one of the said wheels being arranged near each end of the shaft and adjacent to the adjacent casings 9—10. Each of the heart-shaped wheels 32 is arranged with its apex outward and in the plane of the adjacent wheel of the other shaft. A platform support 33 is arranged above the shafts 11—12, the said support having four depending legs or standards 34, each of the said legs depending adjacent to one of the heart-shaped wheels 32. The legs 34 are arranged with their channels inwardly, and in such position that when the heart-shaped wheels are in their normal position, the apex of each

wheel will be in the channel of the adjacent leg. A flexible member 36 in the shape of a cord or wire connects each heart-shaped wheel with the adjacent leg or standard of the platform, and with a cylindrical weight 35 arranged between and below the shafts 11 and 12. One end of each of the flexible members 36 is connected to a standard at the bottom of the channel, and at the lower end of the standard by means of a pin 37 or the like. From this connection each of the said members 36 passes inwardly and over the upper surface of the heart-shaped member to the reëntrant portion of the said wheel, where the said member is connected to the wheel by means of a pin 38 or the like. From the pin 38, each of the said flexible members pass downwardly to a connection with a pin 39 at the adjacent end of the weight 35. The support 33 is thus supported by the weight 35, and the arrangement is such that normally the table will stand in the position shown in the drawing. When an article to be weighed is placed on the table to be described, the support will be depressed, swinging the apex of the heart-shaped wheels downwardly, thus raising the weight 35. At the same time the shaft 19 is oscillated to partially rotate the dial 24. The computations on the dial are so arranged that the amount appears through the transparent sheet 3, and the said sheet may be provided with a line radial to the dial with which the computations will register, in order that the proper amount may be read at a glance. The weight in pounds or ounces may be also indicated by the dial at the same line. In this manner, the weight and the amount will be evident at a glance.

The dial and the platform, that is, the balance and the computing mechanism, may be properly adjusted with respect to each other, by means of the connection between the arm 26 and the wheel 23. The heart-shaped wheels are so shaped to provide the necessary changes in leverage between the platform and the weight.

The platform support is in the shape of a body having diagonally extending arms 40, and the arms 34 depend from the ends of the arms 40. Each of the arms 40 is provided at its outer end with a spherical segment 41, and a table 42 of glass or the like, is supported by the lugs 41, the said table or platform 42 having rounded openings 43 for receiving the lugs 41. The article to be weighed is placed on this table or platform 42, and the table is removable in order that it may be cleaned or for any other purpose.

I claim:—

1: In combination, a hollow base having an opening in its top, a trackway at each side of the base, each trackway consisting of an inclosing casing for containing a

lubricant and having a horizontal slot at its inner side, a pair of parallel shafts, the ends of the shafts extending through the slots of the adjacent trackways, a roller on each shaft in the trackway, a pair of heart-shaped members secured to each shaft, the said members being near the ends of the shafts and the adjacent members of the two shafts being in the same plane and arranged with their apices outward, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, a flexible connection between the lower end of each arm and the weight, each connection passing over the periphery of the adjacent member to the reëntrant portion thereof and being secured to the said member at the said reëntrant portion, the said base being hollow and having an opening in its top, a shaft journaled vertically in the base, a computing dial secured to the shaft in the base, a pulley on the upper end of the shaft, means for adjustably securing the pulley to the shaft, said means comprising an arm secured to the shaft and extending radially of the wheel, said arm having an opening near the periphery of the wheel and the wheel having an arc-shaped slot registering with the opening and a bolt passing through the opening and the slot, a wheel journaled at the opposite side of the transverse shafts from the vertical shaft, an endless belt supported by the said wheel and the wheel of the vertical shaft, and a pulley on each shaft at the belt, said pulleys engaging opposite runs of the belt.

2: In combination, a hollow base having an opening in its top, a trackway at each side of the base, each trackway consisting of an inclosing casing for containing a lubricant and having a horizontal slot at its inner side, a pair of parallel shafts, the ends of the shafts extending through the slots of the adjacent trackways, a roller on each shaft in the trackway, a pair of heart-shaped members secured to each shaft, the said members being near the ends of the shafts and the adjacent members of the two shafts being in the same plane and arranged with their apices outward, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, a flexible connection between the lower end of each arm and the weight, each connection passing over the periphery of the adjacent member to the reëntrant portion thereof and being secured to the said member at the said reëntrant portion, the said base being hollow and having an opening in its top, a shaft journaled vertically in the base, a computing dial secured to the shaft in the base, a pulley on the upper end of the shaft, means for adjustably securing the pulley to the shaft, a wheel journaled at the opposite side of the transverse shafts

from the vertical shaft, an endless belt supported by the said wheel and the wheel of the vertical shaft, and a pulley on each shaft at the belt, said pulleys engaging opposite runs of the belt.

3. In combination, a hollow base having an opening in its top, a trackway at each side of the base, a pair of parallel shafts, each having a roller at each end for engaging the trackways, a pair of heart-shaped members secured to each shaft, the said members being near the ends of the shafts and the adjacent members of the two shafts being in the same plane and arranged with their apices outwardly, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, a flexible connection between the lower end of each arm and the weight, each connection passing over the periphery of the adjacent member to the reëntrant portion thereof and being secured to the said member at the said reëntrant portion, the said base being hollow and having an opening in its top, a shaft journaled vertically in the base, a pulley on the upper end of the shaft, means for adjustably securing the pulley to the shaft, a wheel journaled at the opposite side of the transverse shafts from the vertical shaft, an endless belt supported by the said wheel and the wheel of the vertical shaft, and a pulley on each shaft at the belt, said pulleys engaging opposite runs of the belt.

4. In combination, a hollow base, a dial in the base, the base having an opening in its top to permit inspection of the dial, a shaft journaled vertically in the base and to which the dial is secured, a track at each side of the base, a pair of parallel shafts arranged transversely of the vertical shaft, each of the said parallel shafts having a roller secured to each end and running on the track, a pair of heart-shaped members secured to each of the parallel shafts, the members of each shaft being similarly arranged and oppositely arranged to the members of the other shaft, a platform having a depending arm adjacent to each member, a flexible strand secured at one end to each arm and passing over the adjacent member, a weight between and below the shafts to which the other ends of the strands are connected, a connection between each strand and the member it engages at the reëntrant portion of the said member, and a driving connection between the shafts and the vertical shaft for rotating the said vertical shaft when the parallel shafts are rotated.

5. In combination, a base, a trackway at each side of the base, a pair of parallel shafts, each having a roller secured to each end thereof and running on the trackways, a pair of heart-shaped members secured to each of the parallel shafts near the ends thereof, the said members of each shaft being similarly arranged and having their

thereof, the said members of each shaft being similarly arranged and having their apices outward, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, a flexible connection between the lower end of each arm and the weight, each connection passing over the adjacent member and being secured thereto at the reëntrant portion thereof, said base being hollow and having an opening, a computing dial in the base and visible through the opening, a vertical shaft secured to the dial, and a driving connection between the parallel shafts and the vertical shaft, said connection being adjustable for the purposes specified.

6. In combination, a base, a trackway at each side of the base, a pair of parallel shafts, each having a roller secured to each end thereof and running on the trackways, a pair of heart-shaped members secured to each of the parallel shafts near the ends thereof, the said members of each shaft being similarly arranged and having their apices outward, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, a flexible connection between the lower end of each arm and the weight, each connection passing over the adjacent member and being secured thereto at the reëntrant portion thereof, said base being hollow and having an opening, a computing dial in the base and visible through the opening, a vertical shaft secured to the dial, and a driving connection between the parallel shafts and the vertical shaft.

7. In combination, a base, a trackway at each side of the base, a pair of parallel shafts, each having a roller secured to each end thereof and running on the trackways, a pair of heart-shaped members secured to each of the parallel shafts near the ends thereof, the said members of each shaft being similarly arranged and having their apices outward, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, a flexible connection between the lower end of each arm and the weight, each connection passing over the adjacent member and being secured thereto at the reëntrant portion thereof, a computing dial in the base, and a driving connection between the dial and the parallel shafts for oscillating the dial when the shafts are oscillated.

8. In combination, a base, a trackway at each side of the base, a pair of parallel shafts, each having a roller secured to each end thereof and running on the trackways, a pair of heart-shaped members secured to each of the parallel shafts near the ends thereof, the said members of each shaft being similarly arranged and having their

apices outward, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, and a flexible connection between the lower end of each arm and the weight, each connection passing over the adjacent member and being secured thereto at the re-entrant portion thereof.

9. In combination, a pair of approximately parallel laterally spaced trackways, a pair of parallel shafts, each having a roller at each end running on the trackways, a pair of approximately heart-shaped members secured to each of the parallel shafts near each end thereof, the said members being similarly arranged and having their apices outward, a platform having a depending arm adjacent to each of the said members, a weight between and below the shafts, and a flexible connection between the lower end of each arm and the weight, each connection passing over the adjacent mem-

ber and being secured thereto at the re-entrant portion thereof.

10. In combination, a pair of laterally spaced approximately parallel trackways, a pair of approximately parallel shafts, each having rollers at its ends running on the trackways, a heart-shaped member secured to each of the parallel shafts, the said members being similarly arranged and having their apices outward, a platform having a depending arm adjacent to each of the said members, a weight below and between the said members, and a flexible connection between the lower end of each arm and the weight, each connection passing over the adjacent member and being secured thereto at the reentrant portion thereof.

EDWARD PIERSON.

Witnesses:

J. W. MURPHY,
W. A. GARDNER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."