June 2, 1925. 1,539,934

H. M. CAMERON

SCALE

Filed Dec. 31, 1923

Fig. 1

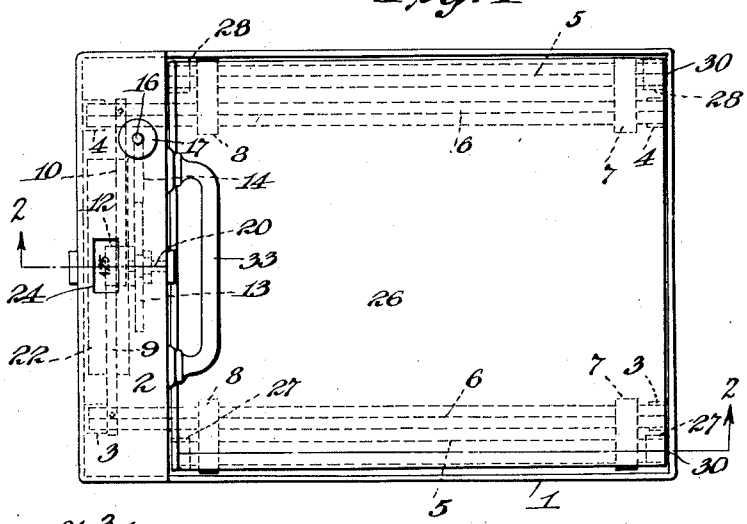


Fig. 2

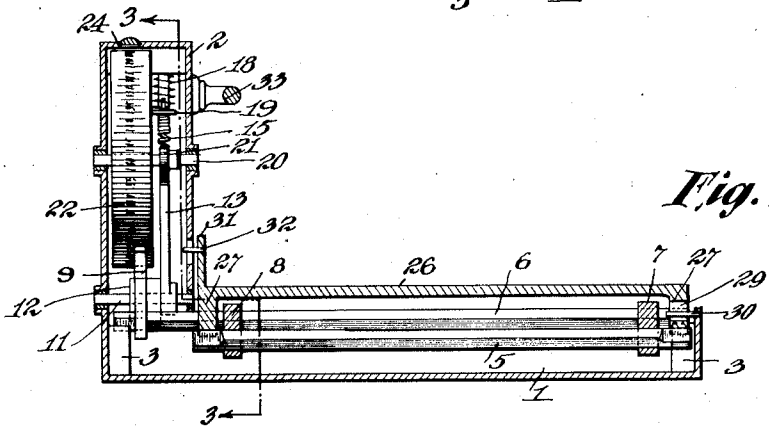
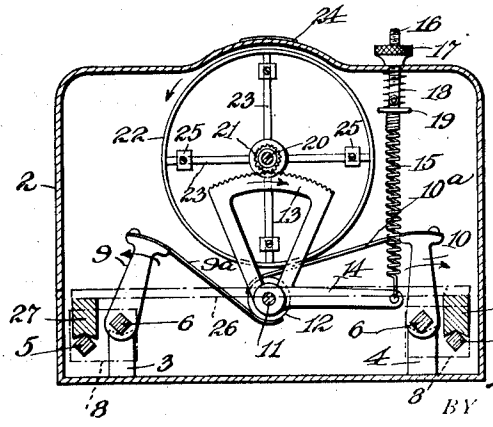


Fig. 3



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Patented June 2, 1925. 1,539,934

UNITED STATES PATENT OFFICE.

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SCALE.

Application filed December 31, 1923. Serial No. 683,609.

To all whom it may concern:

Be it known that I, HUGH M. CAMERON, a citizen of the United States, and a resident of Woodhaven, county of Queens, city and State of New York, have invented a certain new and useful Scale, of which the following is a specification.

The invention relates to scales of the "personal" or "bath room" type, which rest upon the floor, and the dial, or other indicating means, of which are in proximity to the platform, and which must be viewed from above. Scales of this type are intended for personal use in the bath room, dressing or locker room and in the bed room for the use of invalids.

The objects of the invention are to produce a scale of the character described which will be of small size and weight, which will have but few parts; which will not easily get out of order; which will be easy of adjustment and repair; which will be of rugged construction; in which levers of the first class may be employed; in which the load will be inside of the beam bearings whereby there can be no leverage exerted with the beam bearings as fulcrums; in which the bearings of all shafts will be rigid except as to rotation; in which the dial figures will be magnified; which will be portable, and in which the platform will be raised but a short distance above the floor.

These and further objects will more fully appear in the following specification and accompanying drawings considered together or separately.

One embodiment of the invention is illustrated in the accompanying drawings, in which like parts in all of the several figures are designated by corresponding characters of reference, and in which

Fig. 1 is a top plan view of a scale embodying the invention.

Fig. 2 is a longitudinal section thereof, on the line 2—2 of Fig. 1, and

Fig. 3 is a transverse section on the line 3—3 of Fig. 2.

In the embodiment of the invention illustrated 1 designates a stand or base within which the scale mechanism is enclosed. The base 1 is a low, box-like structure open at the top. At one end the base is extended upward to form a casing 2 to enclose the registering mechanism. In practice the horizontal portion of the base is not more than three inches high whereby the same may be shoved under the ordinary bathtub. The vertical casing 2 is of height that the entire scale may be placed under the ordinary bed.

Carried within the base, and near each corner thereof is a bearing block the upper surfaces of which may be of V-shape, as shown. The blocks are arranged in pairs 3, 3 and 4, 4 one pair being in proximity to one longitudinal side of the base, and the other pair being in proximity to the opposite side, as shown.

Supported on each pair of bearing blocks is a scale beam of peculiar construction. Each beam consists of a pair of bars 5 and 6 secured in spaced parallel relation by means of blocks 7 and 8. Preferably the blocks are cast on bars as shown. Each end of each bar is provided with a knife edge. The knife edges of the bars 5 are presented upwardly, and those of the bars 6 are presented downwardly. The ends of the bar 6 of one beam engage the V-shaped upper ends of the blocks 3 at one side of the base and the ends of the bar 6 of the other beam rest in V-shaped upper ends of the blocks 4 at the other side of the base. The bars 6 are nearer the longitudinal center line of the base than are the bars 5, and the latter are in proximity to and parallel with the inner sides of the box-like base. The bars 5 are of less length than the bars 6, and the latter project into the casing 2.

Carried near the end of one bar 6 and projecting upward into the casing is an arm 9, and an arm 10 is carried by the end of the other bar 6.

Journaled in the front and rear walls of the casing 2, and in the longitudinal center line of the base 1, is a shaft 11 on which is mounted a drum 12 and a toothed sector 13, the latter carrying an arm 14. A weighing spring 15 is attached to the free end of the arm 14, and to the top of the casing by an adjusting bolt 16 and a nut 17. A compression spring 18 encircles the bolt 16 and bears against the top of the casing and a plate 19 carried by the bolt. A tape or other flexible connection 9^a connects the end

of the arm 9 with the lower surface of the drum 11, and the upper surface of the drum is connected by a similar connection 10^a to the arm 10.

Journaled in the front and rear walls of the casing 2, above the shaft 11 and parallel thereto, is a dial shaft 20 having a pinion 21 in mesh with the sector 13, and a light, cylindrical band 22 mounted on spokes 23. The periphery of the band 21 carries designating numerals which are visible through a glazed opening 24 in the top of the casing. The glass in the opening may be, and preferably is, of such a nature that it will magnify the characters on the band. Carried on any or all of the spokes of the band 22 is a compensating weight 25.

Carried on the ends of the bars 5 is a platform 26. From the under side of the platform project four lugs arranged in pairs 27, 27 and 28, 28. The dimensions of the platform are such that it will be within the boundaries of the open top of the base 1. The bottom ends of the lugs are V-shaped, and said lugs rest upon the upturned knife-edges of the bars 5.

The lugs are located at the extreme corners of the platform whereby no part of the platform will overhang the lugs, and when in use any weight placed on the platform must be within the boundary of the rectangle defined by the lugs, and the lugs cannot act as fulcrums of a leverage if the weight be placed on the edge of the platform.

The lugs 27, 28 at one end of the platform may be slotted as at 29 for the reception of pins 30 in the base. The opposite end of the platform is provided with a vertical kick plate 31 which carries a pin 32 projecting into a slot in the front wall of the casing 2. The pin and slot connection permits the platform to move relatively to the base, but will prevent the platform from falling off when the scale is inverted.

If desired, a handle may be attached to the scale at any desired and convenient point whereby the device is made portable. The handle 33 is shown as attached to the front of the casing 2 but obviously it may be differently applied.

In Fig. 3 the device is shown in the position it assumes when loaded to half its capacity. Further loading will cause the parts to move in the direction of the arrows and against the tension of the weighing spring.

The weights 25 may be shifted to balance the dial wheel to correct the error in travel occasioned by movement of the sector 13 past the center.

The compression spring 18 is employed to hold the nut 17 in contact with the top of the casing irrespective of the position of the device.

As will be seen the elements 5, 6, 7, 8 and 9 at one side of the apparatus constitute one beam or lever, and the elements 5, 6, 7, 8 and 10 at the opposite side constitute a second lever, and said levers are of the first class, are opposed to each other and the fulcrum of each is divided, one part being in the front of the base and the other being in the rear thereof. The length of each lever is from the bearing points 27 or 28 to the end of the arm 9 or 10, and the fulcrum is the points on the blocks 3, 3 or 4, 4 as the case may be.

While the invention is illustrated in connection with a bathroom scale, it is to be understood that it may be utilized in scales for other purposes.

In accordance with the provisions of the patent statutes the principle of the invention has been described, together with the apparatus which is now considered to represent the best embodiment thereof, but it is desired to have it understood that the apparatus shown is merely illustrative, and that the invention may be carried out in other ways.

The invention having been described, what is claimed as new and desired to be secured by Letters Patent, is as follows:—

1. A scale comprising a base, a pair of opposed levers pivoted on the base, a dial, means for rotating the dial, said dial and rotating means being positioned between the levers, and flexible connections between the levers and said means.

2. A scale comprising a base, a pair of opposed levers pivoted on the base, a dial, means for rotating the dial, said dial and rotating means being positioned between the levers, and flexible connections between the levers and said means, and a platform carried by said levers, said platform being in contact with each lever at two points.

3. A scale comprising a base of rectangular form, a lever extending along one side of the base, a second lever extending along the opposite side of the base, said levers being so pivoted that they may rock toward or away from each other, a rectangular platform resting at its corners on the levers, a rotatable dial, a drum, gearing between the drum and dial, a flexible element secured to the load end of one lever, a similar element secured to the load end of the other lever, said elements being secured to the drum of opposite sides thereof and being wound thereon, and a spring for rotating the drum in one direction.

4. A scale comprising a base of rectangular form, a lever extending along one side of the base, a second lever extending along the opposite side of the base, said levers being so pivoted that they may rock toward or away from each other, a rectangular platform resting at its corners on the levers, a

rotatable dial, a drum, gearing between the drum and dial, a flexible element secured to the load end of one lever, a similar element secured to the load end of the other lever, said elements being secured to the drum of opposite sides thereof and being wound thereon, a spring for rotating the drum in one direction, and spring cushioned means for adjusting the tension of said rotating spring.

This specification signed and witnessed this 28th day of December, 1923.

HUGH M. CAMERON.

Witnesses:

J. F. COLEMAN,

A. E. RENTON.