(No Model.)

J. B. MARTIN.

PENDULUM SCALES.

No. 262,966. Patented Aug. 22, 1882.

Fig. 1.

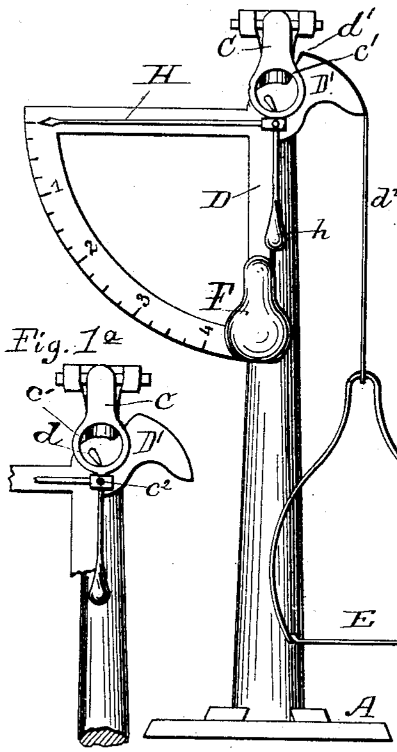


Fig. 2.

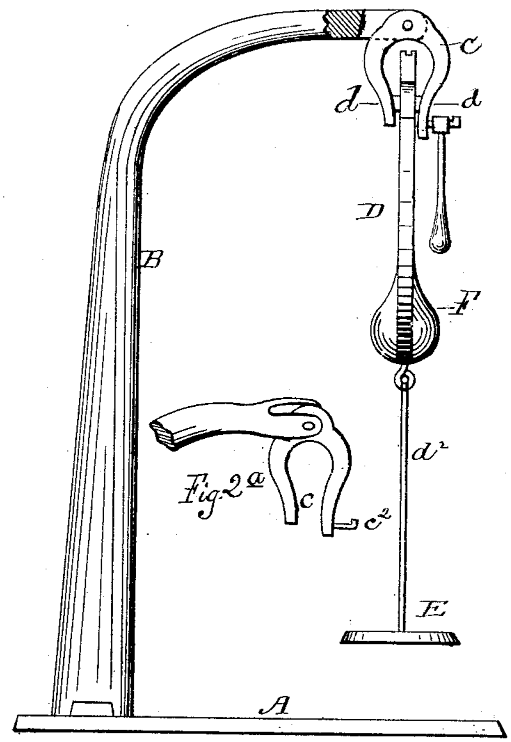


Fig. 3

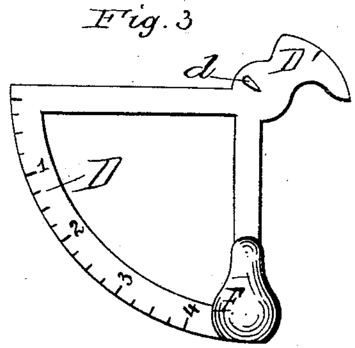
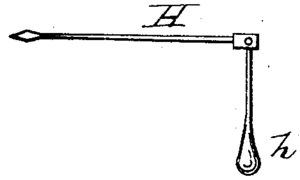


Fig. 4.



Witnesses:

Inventor;
John B. Martin

By
Atty.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN B. MARTIN, OF CINCINNATI, OHIO.

PENDULUM-SCALES.

SPECIFICATION forming part of Letters Patent No. 262,966, dated August 22, 1882.

Application filed April 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. MARTIN, a citizen of the United States of America, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Scales; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of scales known as "pendulum-scales;" and it consists in certain features hereinafter described, and specifically set forth in the claims.

Figure 1 is a front elevation of a scale constructed in accordance with my invention; Fig. 1^a, an enlarged view of a portion thereof. Fig. 2 is a side elevation of the same. Fig. 2^a is an enlarged view of a portion thereof, and Figs. 3 and 4 are details.

Like letters refer to like parts in all the figures.

On the annexed drawings, A represents the base, to which the standard B is attached, which standard is curved, as shown in Fig. 2, for the purpose of affording space for the pan E and the operating parts of the scales, which are suspended from said curved standard. The standard B is slotted at its upper end, and has attached thereto, by a suitable pivot or pin, an open loop, C, one arm of which is slightly longer than the other, as shown in Fig. 2^a of the drawings. This loop is also provided with circular openings c' near its ends, which form bearings for the operating parts of the scales. The longer arm of the loop C is furnished with a pivot-pin, c^2, as will be hereinafter set forth.

D represents the dial-plate, which is curved to form the arc of a circle, and it is provided with lines and figures of graduations at its periphery. These graduations are placed at equal distances apart, the shape of the head D′, by its peculiar construction or shape, admitting the use of a dial-plate with such graduations. The lower part of the dial-plate D is provided with the counterpoise-weight F, which is formed integal with the dial-plate, and on its upper end with a segmental cam-shaped or eccentric head, D′, and with knife-edge bearings d, as shown in Fig. 3. The dial-plate and its parts are suspended by the knife-edge bearings within the openings c' of the loop C.

Attached to the loop C, upon the pivotal bearing c, is an indicator or arm, H, having a weighted arm, b, which serves to keep the indicator-arm in a horizontal position.

Secured to the upper portion, d', of the eccentric head D′ is a strap, d^2, which falls over the face of the same, as shown in Fig. 1. Attached to this strap at its lower end and under the standard B is the scale-pan E.

The parts being put together and adjusted so that the indicator-arm will point to 0, or zero, the counterpoise-weight balancing the pan, the scales are ready for use, and operate as follows: The article to be weighed is placed in the pan E, and its weight, drawing downward upon the strap attached to the segmental or eccentric head D′, draws the same downward in proportion to the resistance offered by the counterpoise-weight, the balanced indicator pointing to the graduations upon the arc, thus indicating the weight of the article within the pan. The loop C being pivoted to the standard and the knife-edge resting upon the loose bearings, the two together are equivalent to a universal joint. By this construction the parts of the scales will be always in their proper vertical position, and inaccuracies which would occur if the base were not set truly horizontal are avoided. The shape of eccentric head allows me to use a dial-plate with equal graduations, which is a great desideratum in the manufacture of scales of this class.

I am aware that it is not broadly new to use an eccentric head, pan, connecting means, and a dial-plate similar to that described by me, and I do not claim such as my invention; but

What I claim as new, and desire to secure by Letters Patent, is—

1. In a weighing-scale, the weighted dial-plate D, having knife-edge pivots d and segmental head D′ formed integral with each other, substantially as shown and described.

2. In combination with a weighing-scale, the suspension-loop C, pivoted to the standard B,

provided with pivot-pin *c* and weighted indicating-arm H, in combination with the weighted dial-plate D and its component parts and pan E, substantially as shown and described.

3. In a pendulum-scale, the standard B, slotted at its upper end and provided with the pivoted loop C, with lateral openings or bearings *c'*, and weighted indicating-arm H, pivoted to the same, in combination with the dial-plate D, having weight F, knife-edge pivots *d*, segmental cam-shaped head D', strap d^2, and pan E, substantially as shown, for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. MARTIN.

Witnesses:
WALTER S. JNO. JONES,
JOHN L. LONG.