

(No Model.)

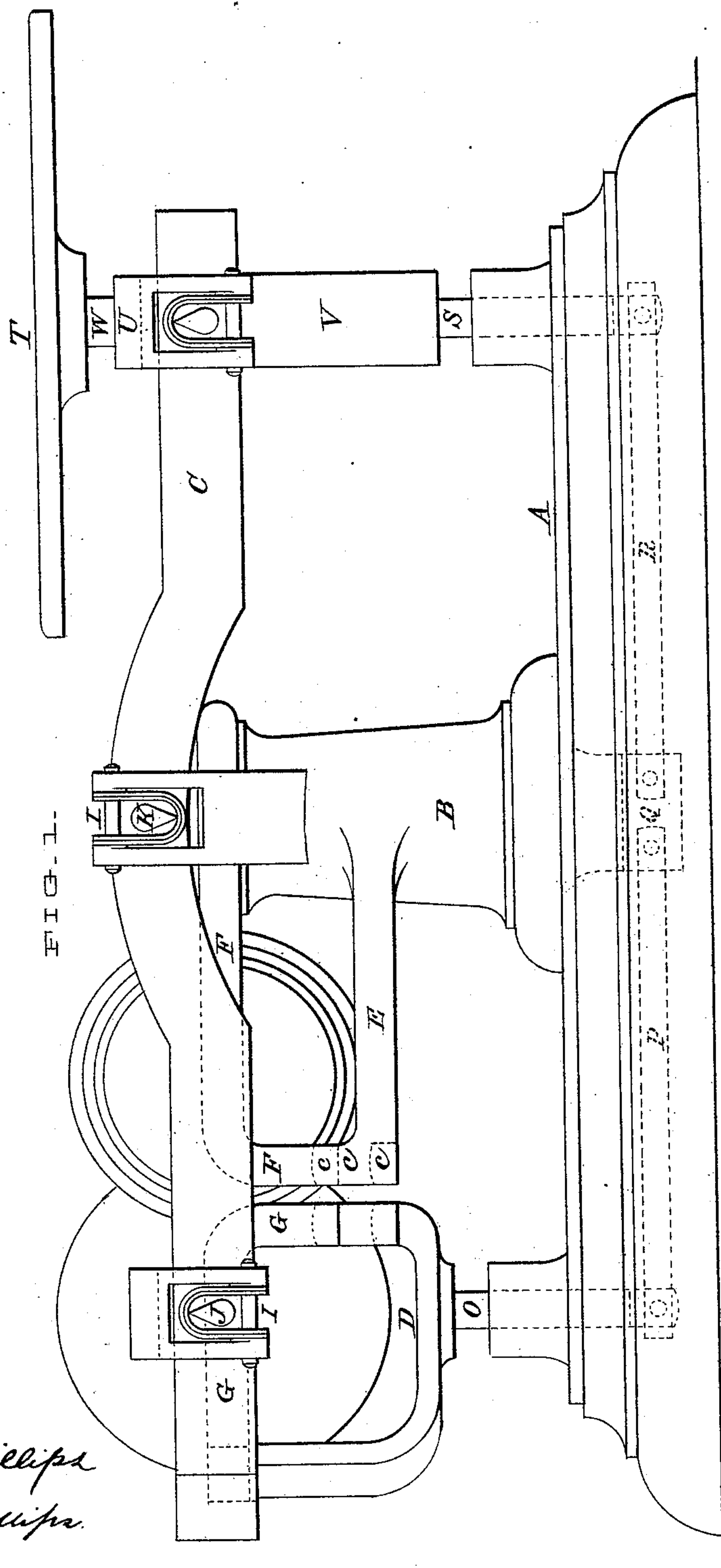
2 Sheets—Sheet 1.

W. C. FARNUM.

WEIGHING SCALE.

No. 279,864.

Patented June 19, 1883.



Witnesses:

E. E. Phillips
W. H. Phillips.

Inventor:

Wm. C. Farnum,
by F. Scott,
Atty.

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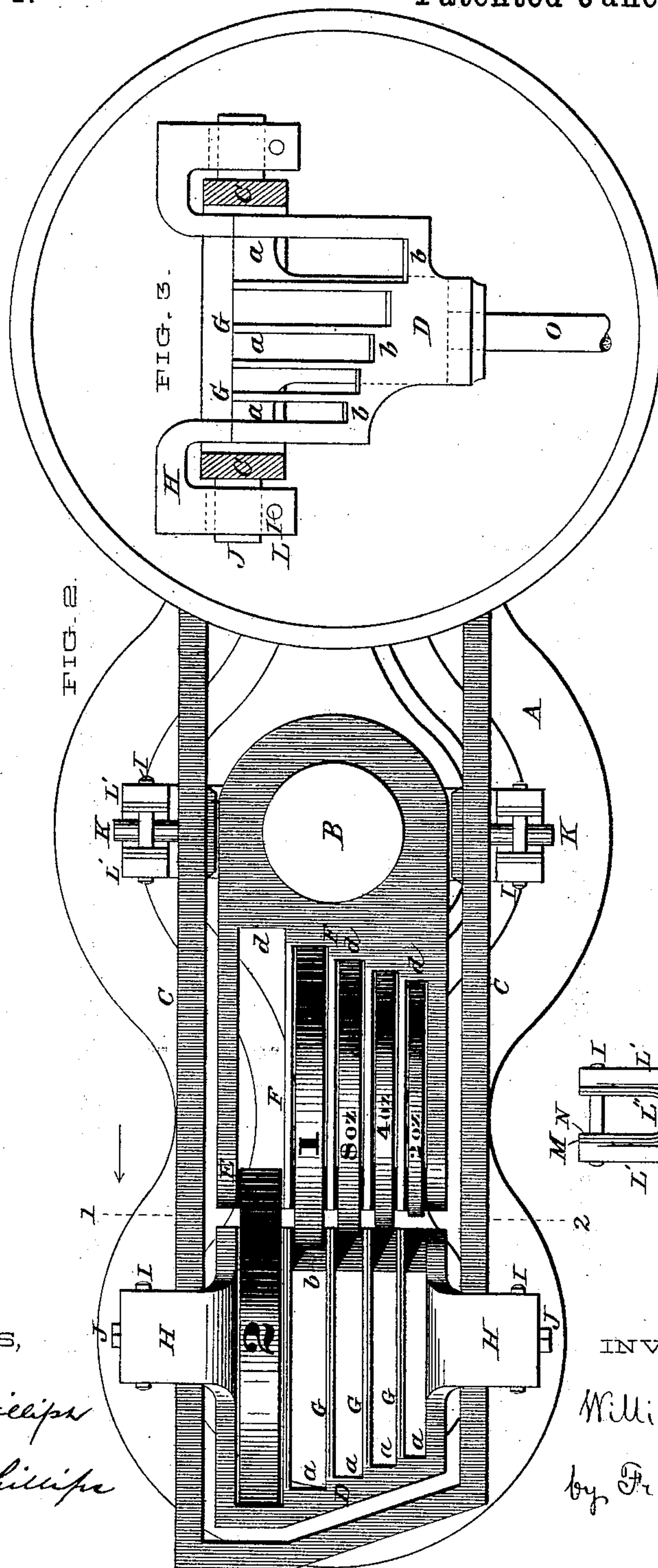
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WITNESSES,

Edward E Phillips
Willis H. Phillips

INVENTOR,

William C. Farnum
by Franklin Scott,
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM C. FARNUM, OF HOOSICK FALLS, NEW YORK, ASSIGNOR OF ONE-FOURTH TO ELISHA S. PECK, OF SAME PLACE.

WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 279,864, dated June 19, 1883.

Application filed December 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. FARNUM, of the village of Hoosick Falls, in the county of Rensselaer and State of New York, have
5 invented certain Improvements in Weighing-Scales, of which the following description, in connection with the accompanying two sheets of drawings, constitutes a specification.

The improvements which constitute the subject-matter of this invention are adapted to be
10 applied to most varieties of the ordinary counter scale or balance. The weights employed are in the form of flat circular disks, and may be either of a uniform or of variable diameter,
15 and may be either solid or perforate. Two receptacles for the weights are employed, one attached to or constructed as an appendage of the main standard, upon which the scale-beam is balanced, and the other pivoted on one end of
20 the beam opposite to the former, and both are so constructed with reference to each other that the weights which are retained in either on edge or in a vertical position may be rolled from either into the other, as may be required
25 in use.

Figure 1 of the drawings presents a side view of an ordinary counter-scale with my improvements applied. Fig. 2 is a plan view of the same. Fig. 3 is an edge view of the weight-receptacle, which is pivoted on one end of the
30 scale-beam and holds the weight in position when the scale is used. This receptacle I term a "cradle," to distinguish it from its companion receptacle attached to the standard of the scale, which I designate a "rack."
35

The pivot-bearings of this scale are of novel construction, as will hereinafter more fully appear. Their construction is seen in Fig. 4.

Inasmuch as the base or platform, the main
40 standard, the knife-edge pivots, and the cradle or plate for supporting the scale-pan are or may be of the usual or conventional type, I will make no special description of them, but will confine myself to a description of the
45 weights and the provisions for carrying them, both when the beam is and when it is not in use, and to the construction of the bearings on which the knife-edge pivots work.

The scale-beam is shown at C C in all the
50 figures, and consists of two parallel longitudinal side pieces, to the outside of which the

pivots J K W are attached, and between which the cradles for carrying the weights and the scale-pan or the platform are suspended. The middle pivots, K K, rest on bearings in the
55 arms or wings X X, which project laterally from main column B of the base for that purpose. Upon pivots J J the weight-cradle D is hung by means of the wings H H, which overhang the scale-beam side pieces, as seen
60 in Fig. 3. Cradle D is constructed with a vertical compartment for each weight. These compartments are separated by partitions G G. When the weight lies in the cradle D the edge of it bears against the back at *a* and front
65 bar or rest, *b*. These bars or stops are so arranged that when the weight is rolled out of rack E into its position in cradle D, its center of gravity will fall in the same vertical plane as the pivot-bearing J. Rack E is attached
70 to or constructed as a part of main standard B or base A, and is in all essential particulars the counterpart of the cradle D. The partitions F F stand opposite to the similar partitions G G of the cradle, and the stops *b b b* and
75 *c c c* are adjusted in planes to correspond each with the other when the beam is in balance. The various compartments of both cradle and rack are graduated in size to correspond with
80 weights of different sizes, as shown.

The scales may be made for any desired
85 number of weights or for any variety of sizes. The weights may all be made of one diameter, and the relative differences in their gravity can be secured by varying their thickness and removing the center, thus leaving them in the form of an annulus. In using the scales the desired weight or weights is or are rolled from the rack E into the cradle D, the several parts being so adjusted with reference to each other
90 that the beam will oscillate without any collision between the weights and cradle or rack resulting. When the weights are all returned to rack E the beam is in balance.

Among the desirable results secured by my
95 improvement the following may be named: the annoying inconvenience resulting from having a number of loose weights lying around on the counter; also, the facility with which a weight represented by a combination of sev-
100 eral weights may be made up without being obliged to overhaul a pile of weights to get at

the middle or bottom one. With my device it is only necessary to touch the desired weight or weights with the fingers and roll them from the rack into the cradle without disturbing the others. The weights are all arranged abreast of each other, instead of one behind or below another, and this arrangement permits any single weight to be moved out of its rank into the cradle without disturbing its fellow, a feature not found in other scales. The back and bottom stops of both the cradle and the rack are so arranged that the weight, when in either position, will have no tendency to roll out into the compartment opposite.

The pivot-bearings are constructed substantially as seen in Fig. 4, and consist of a U-shaped stirrup, L'', made from a piece of flat-rolled plate, bent in the form shown, and pierced through its ends for the passage of the pin I, by which it is hung in its position between the cheeks L' L' of the pivot-bearing support L. Pin I passes through the cheeks L' L' and upper ends of stirrup L'', and the said stirrup is adapted to swing freely on said pin I between the cheeks of the pivot-supporting standard L. The knife-edge of the pivot bears on the inner curve of stirrup L, as seen in Fig. 1. This stirrup, by being loosely hung on pin I, can freely accommodate itself laterally to the pivot-edge, so that the same shall bear thereon throughout its length. The novelty of this part of my invention consists in the use of metallic plate bent up in substantially the form shown and hung on a pin, so as to form a laterally-swinging stirrup for the reception of the pivot-edge. For cheap work it possesses many advantages over the present mode of filing up a stirrup from solid steel and hanging the same on knife-edges. It also affords special facilities for proper alignment and adjustment of the scale-beam on its bearings.

A weight-rack, similar to rack E, may be attached to and used in connection with any counter-scale in which no cradle is employed; but the ordinary weight pan or plate is used, thus making use only of the stationary half of this part of my improvement. This construction would possess some advantages, and therefore I do not release my claim thereto; hence—

I claim—

1. A weighing-scale in which the weight end of the scale-beam is provided with a cradle for the reception and retention while in use of the weight, divided into vertical compartments substantially as shown, and the permanent or stationary portion of the standard, frame-work, or base thereof is provided with a stationary weight-rack divided into compartments similar to those of the weight-cradle, located in opposition thereto, and all arranged to operate substantially in the manner described, and for the purposes set forth.

2. A weighing-scale provided with a stationary receptacle for the retention of the weights, and a cradle pivoted on the scale-beam for holding the weights while in the act of weighing, said receptacle and cradle being similarly divided into vertical compartments for the reception of the weights, and disposed in opposition to each other, so that such compartments shall present their open sides toward each other, in combination with a weight or set of weights of disk or annular form, substantially as described and set forth.

3. A weighing-scale provided with a series of separate stationary weight-receptacles arranged in horizontal rank upon the main structure of the scale, in combination with a cradle pivoted on the scale-beam, divided into a similar series of separate weight-receptacles, the two series of receptacles being arranged in reference to each other so that any weight in any receptacle of either series may be moved into its corresponding receptacle in the other series without interfering with or disturbing its companion weights, substantially as described and set forth.

In testimony whereof I have hereto subscribed my name, at Hoosick Falls, in the county of Rensselaer and State of New York, this 13th day of October, A. D. 1882.

WM. C. FARNUM.

In presence of—

FRANKLIN SCOTT,
ELISHA S. PECK.