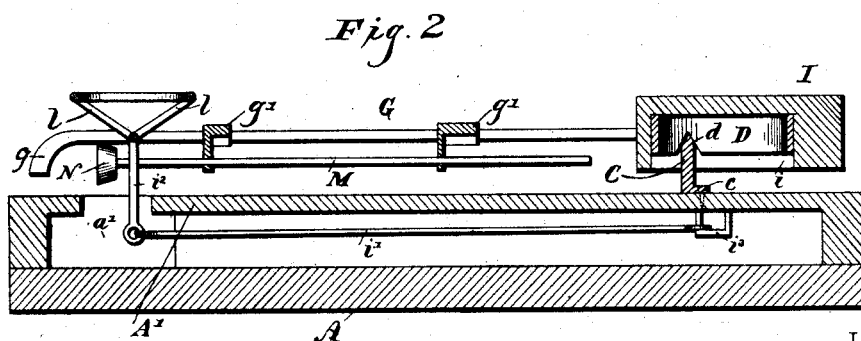
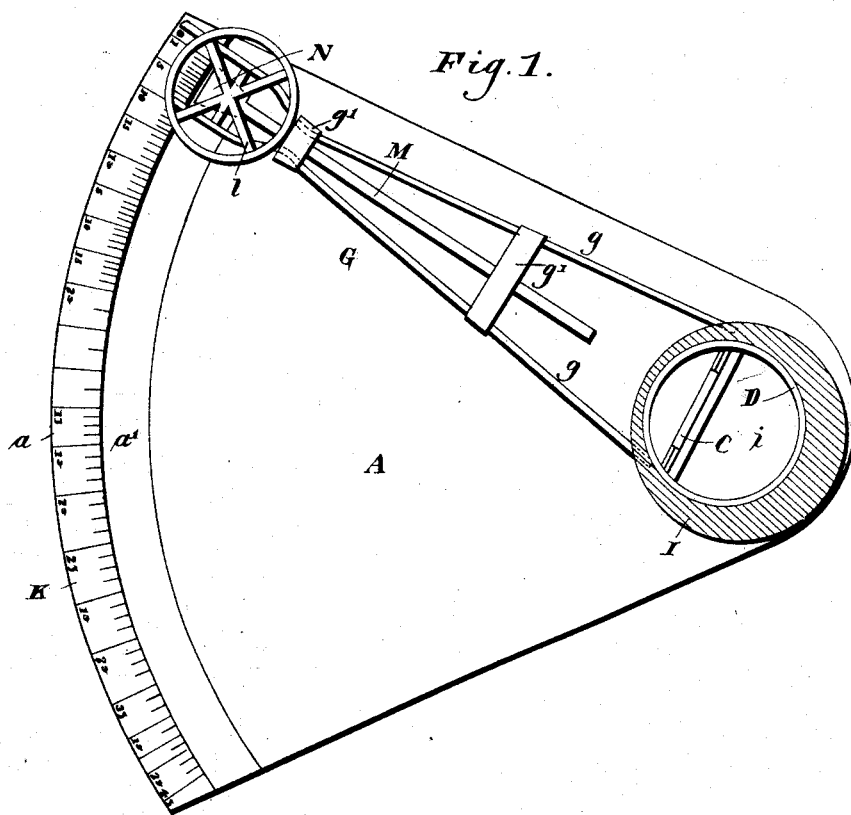


(No Model.)

R. E. GLOVER.
DRUG SCALES.

No. 421,695.

Patented Feb. 18, 1890.



Witnesses,

M. Withers
E. J. Siggers

Inventor

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By *his* Attorneys,

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UNITED STATES PATENT OFFICE.

ROBERT E. GLOVER, OF GRANGER, MISSOURI.

DRUG-SCALES.

SPECIFICATION forming part of Letters Patent No. 421,695, dated February 18, 1890.

Application filed July 31, 1889. Serial No. 319,255. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. GLOVER, a citizen of the United States, residing at Granger, in the county of Scotland and State of Missouri, have invented a new and useful Scales for Weighing Drugs, of which the following is a specification.

My invention has relation to scales for weighing drugs and other articles in small quantities, and is an improvement upon the construction of scales embodied in Letters Patent No. 409,191, granted August 20, 1889, the principles of construction and operation of the two devices being the same; and the invention consists in the combinations of devices hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a weighing-scales embodying my improvements, the counterbalancing-weight being shown in section; and Fig. 2 is a vertical section thereof.

In the above drawings, A indicates the base, which may have the quadrant shape shown, or it may be of any other preferred shape, said base being provided along its front curved edge with the strip *a*, having upon its upper face a graduated scale K.

Supported upon and adapted to be secured to the base A in any suitable manner is a table or platform A' of a shape corresponding to that of the base A, a narrow opening *a'* being left between the front edge of the table and the rear edge of the strip *a*.

Upon the table A', near its rear end, is secured by screws *c* a metallic strip C, the upper edge of which is sharp, whereby to serve as a knife-edge bearing for a ring D, which is provided with notches *d* for the reception of said edge, as shown, said ring serving the same purpose and operating in a manner similar to the pivoted plate D in my aforesaid patent.

G is the scale-arm, which may be a single arm, as in my aforesaid patent, or it may consist of two sections *g*, as shown, united by the cross-pieces *g'*, the whole forming practically a single arm. The rear ends of the sections *g* are secured to a weight I, which in this instance is made annular, and having an eccentrically-located socket or recess *i* upon its

under side. To the forward ends of the sections *g* are secured arms *l*, which are adapted to support a scale-pan, while one of said sections *g* is curved downward and plays over the scale. As shown, the weight I is supported upon the upper edge of the ring D, upon which edge it is adapted to freely turn when the scale-arm is shifted in its position. By reason of the eccentrically-located recess *i*, formed in the weight I, it is apparent that said weight may be so mounted on the ring that the heavier portion lies in rear of the pivotal axis of the ring D, and said weight is so arranged relatively to the scale-arm that it will exactly counterbalance the combined weight of the latter and the scale-pan when said arm points to the zero mark, the latter being in this instance about twenty degrees to one side of a line perpendicular to the pivotal axis of the ring D, as shown, instead of exactly at right angles to said axis, as in the aforesaid patent.

To steady the scale-arm when being shifted, a rod *v'* is provided, the forward end of which is hooked to a loop on the lower end of the vertical arm *v*, secured to the scale-arm and likewise hooked at its rear end to a staple *v''* on the under side of the platform.

To provide a means for compensating for any imperfections in the construction of the mechanism and to balance the scale-arm when paper or other substance is placed in the scale-pan, I employ a rod M, carrying at its forward end a weight N, said rod passing through openings in the cross-pieces of the scale-arm and adapted to be adjusted horizontally therein to carry the weight closer to or farther from the fulcrum of the ring D; or, instead of this arrangement, the rod M may be made stationary and the weight made adjustable thereon, or any other preferred arrangement may be adopted whereby to secure the desired result.

The operation of the described construction of my device is precisely similar to that of the construction shown in my aforesaid patent, and need therefore not be given in detail. It will be seen that when the scale-arm is shifted the heavier portion of the weight will be shifted in its position, thereby changing its position relatively to the fulcrum of the ring in a manner precisely similar to that

of the weight I in my patent, whereby the quantity of material placed in the scale-pan to balance the arm will vary according to the distance the scale-arm is moved away from the zero mark, as will be understood.

What I claim as new is—

1. In a weighing-scales, the combination, with a fulcrumed ring, of a weight provided upon its under side with an eccentrically-located socket, and supported and adapted to turn upon the upper edge of said ring, as described, and a scale-arm secured at its rear end to said weight and adapted to carry at its forward end a scale-pan, for the purpose specified.

2. In a weighing-scales, the combination, with the base having the graduated scale K and the platform or table supported upon said base, of the strip C, secured upon said table, the ring D, fulcrumed upon the upper edge of said strip, the weight I, having the recess *i* and supported and adapted to turn upon said ring, and a scale-arm secured at its rear end to said weight and its forward

end adapted to play over the scale and to support a scale-pan, for the purpose specified.

3. In a weighing-scales, the combination, with the base having the graduated scale K and the platform or table supported upon said base, of the strip C, secured upon said platform, the ring D, fulcrumed upon the upper edge of said strip, the weight I, having the recess *i* and supported and adapted to turn upon said ring, a scale-arm secured at its rear end to said weight and its forward end adapted to play over the scale and support a scale-pan, and a second weight supported by said scale-arm and adapted to be adjusted relatively thereto, for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ROBERT E. GLOVER.

Witnesses:

GEORG W. DAVIS,
A. D. SNYDER.