

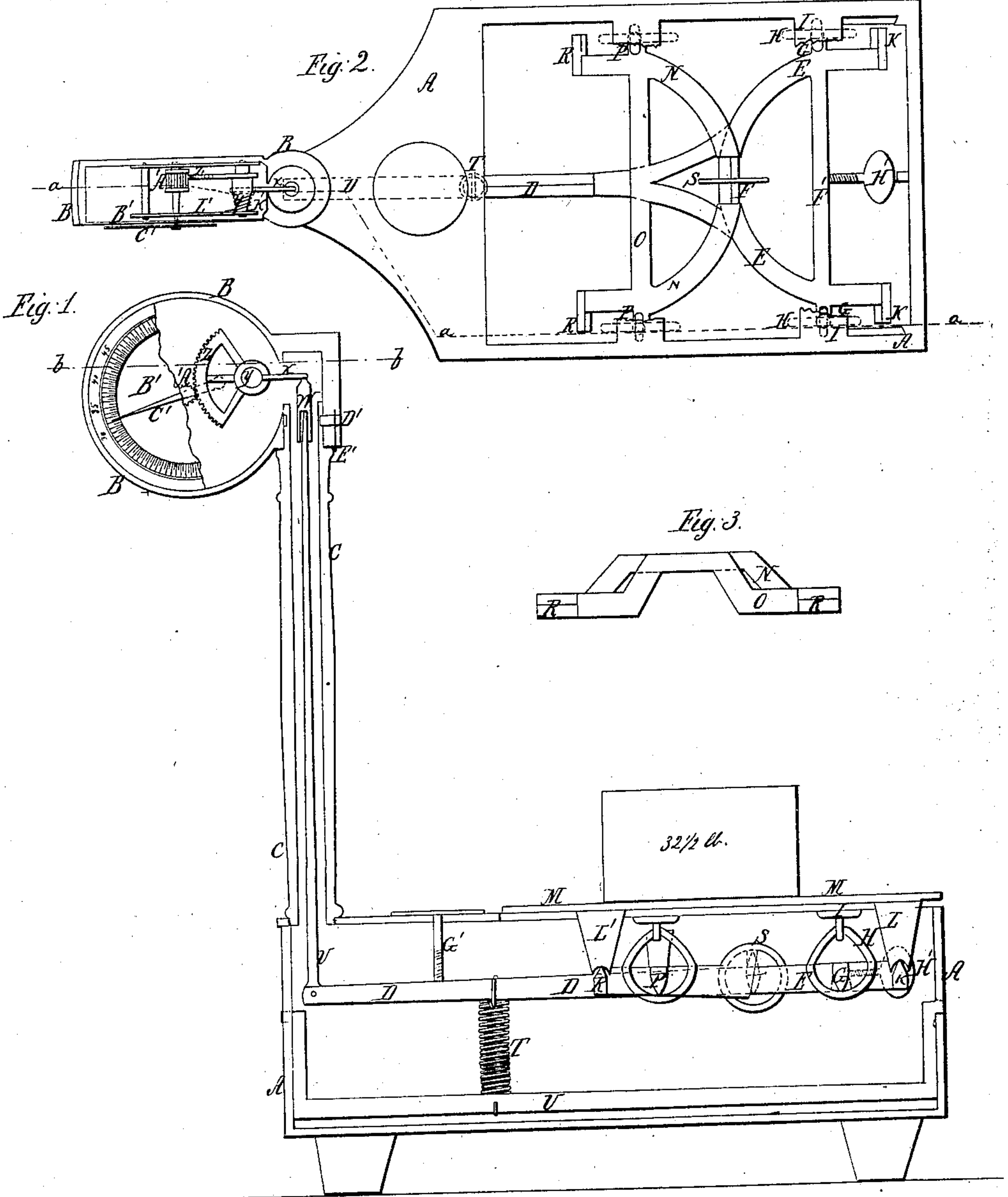
The specification in this patent  
is not in print.

*R. Newell.*

*Balance Scales.*

*N<sup>o</sup> 8942.*

*Patented May 11, 1852.*





# UNITED STATES PATENT OFFICE.

ROBERT NEWELL, OF LEBANON, INDIANA.

## PLATFORM-SCALE.

Specification of Letters Patent No. 8,942, dated May 11, 1852.

*To all whom it may concern:*

Be it known that I, ROBERT NEWELL, of Lebanon, in the county of Boone and State of Indiana, have invented a new and Improved Scale or Platform Balance; and I do hereby declare that the same is described and represented in the following specification and accompanying drawings.

The nature of my invention consists in connecting a spiral or other spring with the lever or levers of a platform scale or balance so that the weight of the article or body weighed may be indicated by the extent to which it affects or draws said spring, and in connecting the lever or spring with a graduated scale and index so that the weight of the body may be read off by mere inspection, the graduated scale and index being so connected with the lever that they may be free to turn entirely around in a horizontal plane so as to be readily observed from whatever side it may be most convenient.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, referring to the accompanying drawings in which the same letters indicate like parts in all the figures.

Figure 1 is a side view of the scale or balance cut through at the broken dotted line *a, a* Fig. 2 to show the interior. Fig. 2 is a top view of the same—the platform being taken off to show the form and position of the levers and the head or indicator being cut through at the dotted line *b, b*, Fig. 1, to show its interior.

A, A is the box or case containing the levers and springs; B, B is the head or indicator and C, C is a hollow pillar connecting the two and supporting the head as represented. The levers may be constructed and arranged in any of the usual modes employed in platform balances.

In Fig. 2 D, D is the principal or long lever single at one end but branching at the other so as to form the two curved arms E, E which are connected by the two crosspieces F and F'—opposite the ends of the crosspiece F' project the two fulcrums G, G, the lower narrow edge of each resting in a ring H which depends from a cross bar I; this cross bar may be secured to or form part of the box A, A. At the extremities of the two arms E, E project two bearers K, K parallel to the fulcrums above described but having a narrow or sharpened edge at the

top and supporting the feet L of the platform M, M.

N, N is a curved lever its two arms being connected by the crosspiece O the middle portion of the curve and of the crosspiece being bent upward as shown in Fig. 3 so as to pass over the long lever. This lever has two fulcrums P, P supported in the same manner as those of the long lever already described and also two bearers R, R similar to those of the long lever and supporting by means of the feet L' the end of the platform opposite to that supported by the bearers of the long lever. The middle portion of the curved or short lever has a narrow edge at the top and a corresponding portion of the crosspiece F' of the long lever has a narrow edge at the bottom and the two levers are here connected by the ring S.

A spiral spring T connects the single arm of the long lever with the fixed bar U as represented and to the extremity of the same arms is connected the rod V which extending up within the hollow pillar C terminates in a point within a socket formed in the lower part of the short rod W. To the upper end of this short rod is connected an arm X projecting from the axis Y upon which is a toothed sector Z gearing into the pinion A', the axis of which projects through the face B' of the head, this face being partially broken off in Fig. 2 to show the interior. On the end of the axis of the pinion a hand or index C' is secured, the point of which passes over a graduated circle on the face. Now when any body or article to be weighed is placed upon the platform, that portion of its weight supported by the bearers K, K of the long lever will tend to raise the single arm of that lever since it is on the opposite side of the fulcrums, while that portion of the same weight which is supported by the bearers R, R of the short or curved lever will tend to raise the middle portion of that lever where it is connected with the long lever by the ring S. As this point of connection is on the opposite side of the fulcrums of the long lever from its bearers, it is evident that the two portions of the weight supported by the two levers respectively will combine in tending to raise the single arm of the long lever D, D, and this tendency being resisted by the spring T, the amount to which the spring is extended, or in other words the distance through which the extremity of this



arm of the lever is raised, determines the weight of the body upon the platform. The end of this arm of the long lever is connected as above described with the hand or index C' of the head and the raising of the lever consequently moves the hand and the weight of the article may be read off upon the graduated circle of the face by simple inspection; thus dispensing with the application of different weights or peas and the moving of peas upon an arm or lever.

The upper end of the pillar C, C fits into a socket in the head and is there secured by the key D' fitting into a groove in the pillar, said key being secured by the pin E'. The head is thus free to turn and may be made to face in any direction to suit the position of the weigher or the weight may be shown to a spectator or spectators with the greatest facility. A rod G' screws into the single arm of the long lever and a broad head on its upper end resting on the fixed cover of that portion of the box not covered by the platform supports this part of the lever when not in use. A ball or weight H' is connected with the cross piece F' of the long lever for the purpose of adjusting the

balance—the ball or weight being moved by means of the screw upon the rod which connects it to the cross piece.

A spring K' may be coiled around the axis Y one end resting on the arm X and the other being attached to the fixed plate L' to insure the descent of the short rod W when the rod V descends, or the rod W may be made sufficiently heavy by a weight or otherwise to effect the same purpose.

What I claim as new and desire to secure by Letters Patent in the above described scale or balance is—

The rod V and the rod and socket W and sector Z, or their equivalents in combination with the revolving head and face (or graduated plate) and hand or index to show, at once and in any required direction, the weight of the article weighed.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

ROBERT NEWELL.

Witnesses:

JOHN J. NISBET,  
THOMAS J. CASON.