Underwood & Stevens.

Platform Scales.

No. 5813

Patented Sept 26. 1848.

Fig 6.

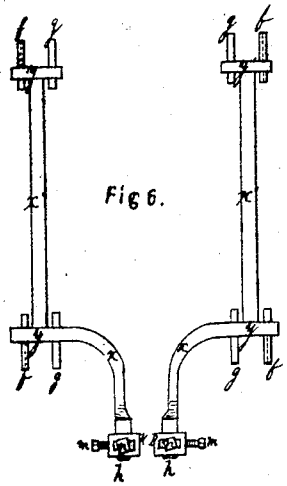


Fig 2.

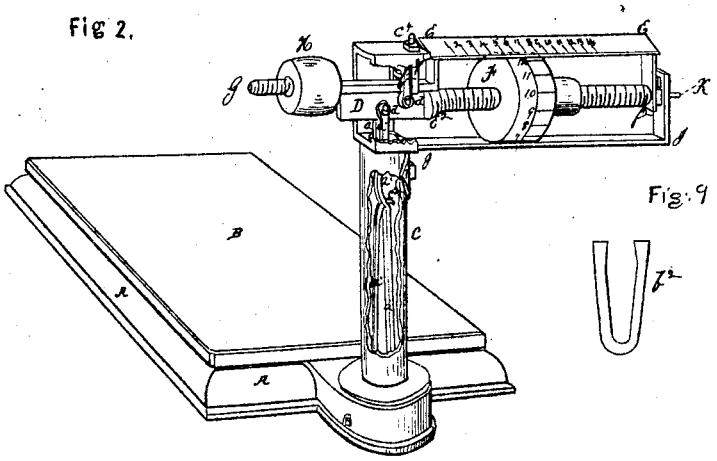


Fig 9

Fig 1.

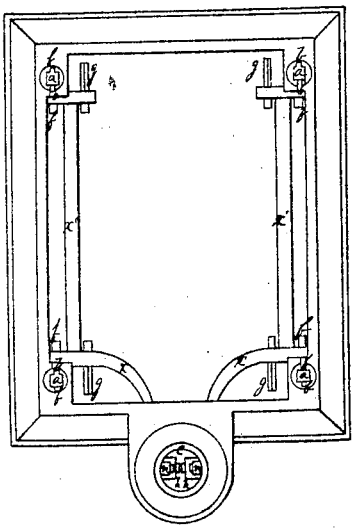


Fig 3.

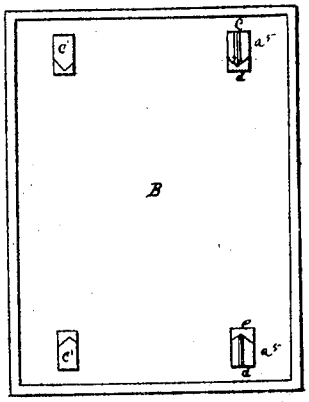


Fig 11

Fig 8.

Fig 4.

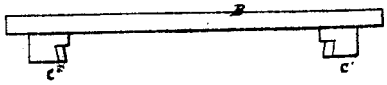
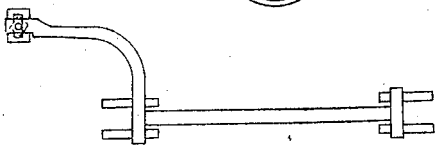


Fig10.

Fig 7.



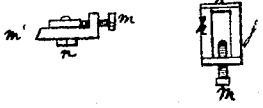
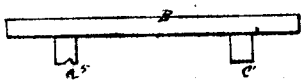


Fig 5.



UNITED STATES PATENT OFFICE.

JOHN UNDERWOOD AND STEPHEN F. STEVENS, OF MONTPELIER, VERMONT; SAID UNDERWOOD ASSIGNOR TO SAID STEVENS.

PLATFORM-SCALE.

Specification of Letters Patent No. 5,813, dated September 26, 1848.

To all whom it may concern:

Be it known that we, JOHN UNDERWOOD and STEPHEN F. STEVENS, of Montpelier, in the county of Washington and State of Vermont, have invented a new and Improved Mode of Weighing by Platform-Scales; and we do hereby declare that the following is a full and exact description.

The invention consists in a platform B resting upon the short arms $y\ y\ y'\ y'$ of two or more curved levers $x\ x$, of the same power firmly attached to two bars $x'\ x'$ one on each side of the frame, running at right angles to the short arms and connecting the lever arms $y\ y$ with the arms $y'\ y'$ on each side respectively, the levers x thereby communicating their power to these connecting bars $x'\ x'$, and which long arms may be of a curved or such other form as will convey the power to the twin rod $a'\ a'\ a^4$ connecting with the beam D.

In our scales we have two connecting bars $x'\ x'$ to connect the short arms $y\ y$ and $y'\ y'$ of the levers. These short arms are hung on pivots f, f, f, f. In common portable platform and in hay scales we use four of these short arms and two long arms. In an extended or railroad scale, if a great length of the platform is wished, we have as many of these short arms of the lever and at such distances from each other as may be necessary to support the weight, and we extend the other, or long, ends $x\ x$ of the levers in such direction and to such place as may be convenient for using the scale beam.

Reference being also had to the annexed drawing, making a part of this specification, which represents as follows.

Figure 1, shows the frame and levers as they will appear from a bird's-eye view. a, a, a, a, are square holes or mortises cut through near the corners of the frame, to be of a size sufficient to admit loops of strength enough to support the weight that the scale is designed to weigh; these mortises are made tapering, being the smallest at the top. b, b, b, b, b, b, b, b, are grooves or places in the frame on two sides of the loop-holes suitable to lay a pin in to support the loop, the upper part of the loop passing over the pin. c is a hole through the frame, through which hole connecting rods pass. See Fig. 1.

Fig. 2, is a perspective view of the whole scale when set up. A, is the frame. B, is the platform. C, is the hollow pillar, through which the twin connecting rod a' a^4, Fig. 10 passes from levers $x\ x$ to beam D. D, is the main beam, with two pivots set near the end d, and seen at d, d; from e^2 to f^2 a screw is cut on the beam, on which screw the cylindrical graduated weight F, runs, on which weight are marked the smaller divisions of weight. E is the graduated scale made fast to the main beam and on which scale the larger divisions of weight are marked. F is the weight or poise. G, is the balancing screw. H, is the weight for balancing. I is a beam made fast to the pillar and running directly under the main beam, and at the end of I, a plate rises above the end of the main or screw beam, with a slot cut through near the upper end for the pin K, which is a part of the main beam, to move or play in. a^2, a^2, is a loop into which the connecting rod a' a^4 (Fig. 10) is hooked. b^2 is a loop by which the beam is suspended to the top of the pillar, these loops being in the form described by Fig. 9. c^4 is a nut and screw which fastens the suspenson hook represented in Fig. 11, to the cap of the pillar. d d, are two pivots set in the main beam and supporting the loops.

Fig. 3, is an inverted view of the platform. a^5, a^5, is a view of two of the posts with a groove cut in them from d, to e, the grooves to be in the same line or direction. e', e' is a view of the two other posts, the face e', to be flat and both to be on the same level or plane.

Fig. 4 is a side view of the platform.

Fig. 5, is an end view of the platform and posts. a^5, shows the groove described as d, e, in Fig. 3. The ends of the posts, as seen in Figs. 3, 4, and 5, rest on the edge of pivots g, g, as seen in Fig. 6, which raise the platform high enough to carry it above the frame, just far enough to be perfectly clear from it, so that the weight of the platform and whatever is placed on it shall entirely rest on the pivots.

Fig. 6 is a view of the levers which are used to support the platform. f, f, are pivots set in the levers $y\ y\ y'\ y'$ and the under sides of them are finished to an edge. And these edges of the pivots are to be on a right line with each other; these pivots rest on their edges in the loops d' d'' (Fig. 8) as they hang in the frame as described under

Fig. 1. g, g, are pivots set in the levers, which have their upper sides finished to an edge; these edges to be parallel with pivots f, f; h, is a nose-iron attached to the lever, seen and described in Fig. 7. x' x' are two parallel extended connecting bars which connect the short levers y y with the parallel short levers y' y'.

Fig. 7, is the nose-iron. j, is a bird's-eye view of it in an inverted position. The under part of the end k, is worked to an edge. m, m, are screws to move the nose-irons on the levers by passing through the nose irons h, h, and pressing against the levers x, x, for adjusting the machine to the true standard of weight. m', is a side view of the nose-iron also in an inverted position. n, is a screw that passes through the slot of the nose-iron into the nose of the lever, to fasten them together, as seen at k, Fig. 6. When the nose-iron is made fast to the lever and the lever is placed in its proper position in the frame, the edges of all the pivots and the edge of the nose-iron should be parallel with each other and these edges should be in a horizontal position and in the same plane. There are two of the above described levers and nose irons, one on each side of the frame, and the connecting bars of the levers lie parallel with the sides of the frame.

Fig. 8: d' is a front view of the frame loops; d'' is a side view of the same. These loops are made so that the form of the end of them which passes through the frame shall very nearly fit the frame but not so close, however, as to prevent ther being perfectly free to play a very little on the pin which supports them, but not so much as to allow the posts of the platform to strike the frame.

Fig. 9: b^2 is a side view of the beam loop. b^3 is an end view of said beam loop.

Fig. 10 is the twin connecting rod. a', a', passes from one of the nose-irons to the lower beam loop, and connects them together. a^4 passes from the other nose-iron and hooks through a' a' at c^2.

H Fig. 11 is a hook which is fastened to the top of the pillar on which hook the beam loop b^2 (Fig. 2) is suspended. z is a screw by which it is fastened to the pillar.

What we claim is—

1. The manner in which we arrange and combine the levers x x for supporting the platform. That is to say we claim connecting the short arms y y of these levers by extended connecting bars x' x' with similar short arms y', y', at the other end of the platform, said short arms sustaining the platform in the manner described, whereby our scale presents fewer points of bearing and connecting part than others in use.

2. We also claim as our invention the use of the screw for a scale beam and the mode of registering the divisions of weight on the graduated plate fixed to the beam and on the circumference of the cylindrical poise.

JOHN UNDERWOOD.
STEPHEN F. STEVENS.

Witnesses:
F. F. SHERRILL,
S. R. CLARK,
S. I. C. FRENCH.