

R. J. McKeone.

Pendulum Scales.

N^o 110,261.

Patented Dec. 20, 1870.

Fig. 1.

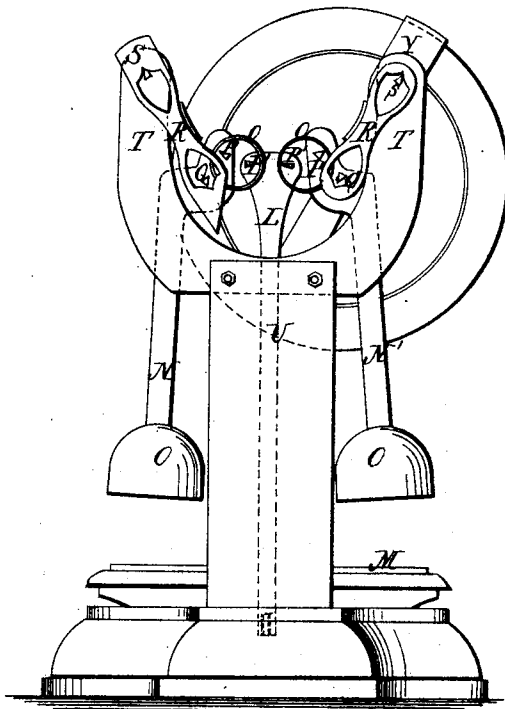


Fig. 2.

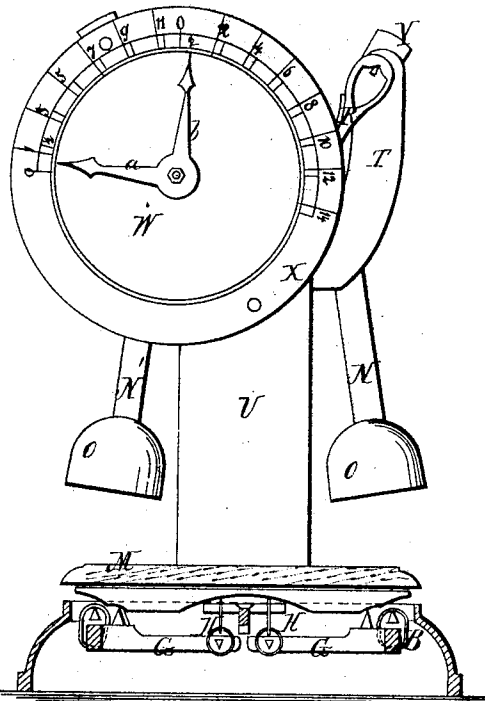
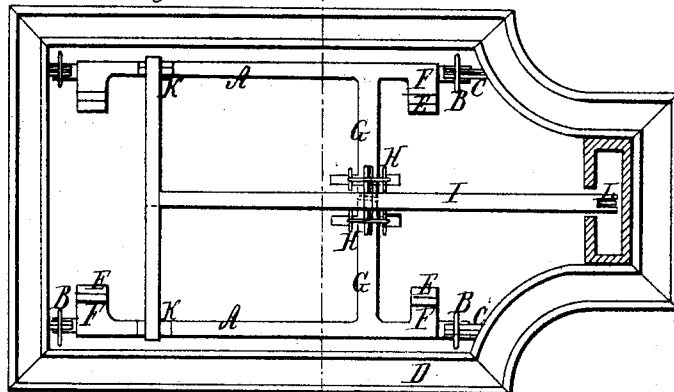


Fig. 3.



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RICHARD J. McKEONE, OF INVERNESS, MICHIGAN.

IMPROVEMENT IN PLATFORM WEIGHING-SCALES.

Specification forming part of Letters Patent No. **110,261**, dated December 20, 1870.

To all whom it may concern:

Be it known that I, RICHARD JAMES McKEONE, of Inverness, in the county of Cheboygan and State of Michigan, have invented a new and Improved Scale; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in scales; and it consists in an improved arrangement of the suspending devices for the platform, calculated to simplify and cheapen the cost of the same; also, in an improved arrangement of levers with fixed weights and pointers working over dials to indicate the weights, in substitution of the ordinary scale-beams and movable weights, as hereinafter described.

Figure 1 represents a rear elevation of my improved scale. Fig. 2 represents a front elevation partly sectioned; and Fig. 3 represents a horizontal section.

Similar letters of reference indicate corresponding parts.

The suspending-bars A for the platform are hung by links B from stud-pins C, projecting from the inner walls of the base D. They are provided with vertical points E, rising from the inner ends of short arms F.

G represents longer arms, also connected to the bars A, and projecting toward the center line between the said bars, near which they are connected by links H to the lever I, supported at one end on the points K of the bars A, and connected at the other end to the bar L, suspended from the weighing-levers. All the bearings of these platform-suspending devices work on knife-edge supports in the usual way. The weight on the platform M, no matter where it is placed, will oscillate the bars A alike, and transfer thereby the strain to the lever I through the links H, and from the bar I it is imparted to the suspending-bar L in the usual way.

N N' are the levers, with permanent weights O at the ends of the long arms, and from the short arms of which the bar L is suspended by the rings O and studs P P'. These levers are

suspended by their studs Q in links R, suspended on studs at S, projecting from curved arms T, rising up at opposite sides of the vertical line of the bar L from the stand U.

W is a disk supported centrally on a prolongation of the stud Q of one of the levers, N', and within a circular scale-rim, X, supported on a bar, Y, connected to the same stud, Q, and to the stud S of the arm T on the same side of the vertical line of the bar L with the lever N', to which it is connected. This disk W carries two pointers, *a* and *b*, for indicating the weight as they are carried around the scale by the turning of the studs Q, caused by the downward movement of the short arms of the levers when articles to be weighed are placed on the platform. The disk W and scale X are connected to the stud-pins Q and S so as to vibrate from the point S in unison with the vibration of the levers from the said points S on the links R. These links R and the rings O are introduced to prevent any sliding movements of any of the parts, which would otherwise be necessary in consequence of the variations constantly taking place in the distance horizontally between the studs P and P' and between P and Q. Moreover, these links have the effect to constantly change the line of draft between the studs P' and P, as is required by the movements of the points P and the weights of the levers N around the center Q, to cause a given weight on the bar L or platform to have the same effect on the weighted arms—*i. e.*, to move them through the same distance, whether they are nearer to or farther from the vertical line, so that the divisions of the scale may be uniform. The pointers can only move a quarter of a revolution, and in order to make the disk W and the scale-rim X as small as possible, and yet have the spaces on the scale as wide as can be, I place two pointers on the disk at right angles to each other and extend the scale on the rim X to half the circumference, alternating the marks and quarters between the two numbers, placing the even numbers on one quarter for one pointer, and the odd numbers on the other quarter for the other pointer.

The disk W need not be used necessarily, the pointers only being placed on the stud of the lever.

In practice I propose to place pointers on the fulcrum-studs of each lever, and arrange therewith the necessary scale-rim.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The arrangement of the bars A, short arms F, points E, long arms G, and lever I, all substantially as specified.

2. The combination, with the bar L, of the

weighted levers N N', links R, and rings O, substantially as specified.

The above specification of my invention signed by me this 20th day of September, 1869.

R. J. McKEONE.

Witnesses:

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