G. H. CHINNOCK.

SPRING-SCALES.

No. 190,824. Patented May 15, 1877.

Fig. 1.

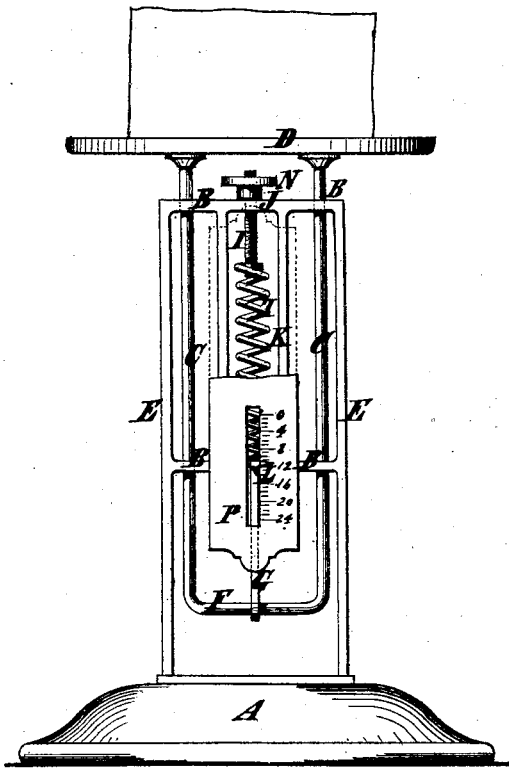
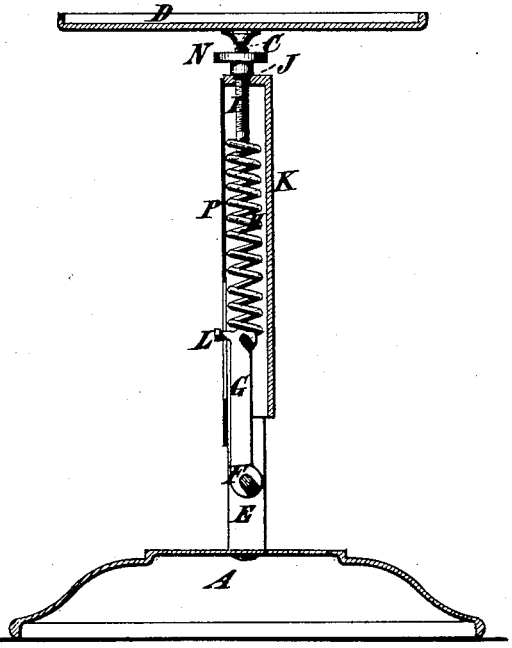


Fig. 2.



Witnesses,

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UNITED STATES PATENT OFFICE.

GEORGE H. CHINNOCK, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE, ASSIGNMENTS, TO L. N. MOWRY & CO., OF NEW YORK CITY.

IMPROVEMENT IN SPRING-SCALES.

Specification forming part of Letters Patent No. **190,824**, dated May 15, 1877; application filed November 15, 1876.

To all whom it may concern:

Be it known that I, GEORGE H. CHINNOCK, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Scales for Weighing, of which the following is a specification:

Our improvement consists in the combination of a scale-pan, means for guiding it vertically, a counter-balance for said scale-pan, connected therewith without the intervention of levers, and an index, whereby a simple, cheap, and accurate scale adapted for household use is obtained.

Another improvement consists in the combination, with a scale composed of the parts just mentioned, of means for adjusting the index, as hereinafter described.

Other improvements consist in details of construction to be hereinafter explained.

In the accompanying drawing, Figure 1 is a front view of a portable scale embodying my invention, and Fig. 2 is a transverse vertical section of the same.

Similar letters of reference designate corresponding parts in both the figures.

A designates a pedestal or stand, which is made to rest on a table, counter, or other place. Instead of this, however, any other suitable stand may be used—as, for instance, a stand extending from any support. B B designate guides, in which rods C C, supporting a scale-pan, D, are free to move vertically. These guides are shown as being supported by standards E E. But they may be supported in other ways; for instance, they may extend out horizontally from a plate or bracket which is capable of being fastened to the edge of a counter, table, or other object. The rods C C are shown as having the scale-pan D fastened to their upper ends, and as being united at the bottom by a yoke, F, connected by a link or rod, G, with a counter-balance, represented as consisting of a spring, H. Though this is a simple means for connecting the scale-pan with its counter-balance, other means may be adopted—as, for instance, a cord or chain passing round a pulley below the counterbalance; or, in lieu of this, the scale-pan may be connected directly with a compressible instead of an extensible spring.

The spring counter-balance H, before mentioned, is shown as suspended from an adjustable hanger, I, supported on a bridge or arm, J, and provided with a screw-thread and a nut, N, fitting thereon, whereby it may be moved in the direction of its length at pleasure. This counter-balance is shown as being inclosed in a case, K, supported from the standards E E, and provided on the front with an index-plate, P, on which are marks and numbers indicative of weights in pounds. L is an index, connected with the counter-balance, and arranged so that when the latter is affected by an article placed upon the scale-pan it will, in connection with the index-plate, indicate the weight thereof.

An article placed on the scale-pan of this scale will act directly upon the spring counter-balance in the same way as an article hung on an ordinary hook-scale will act on its counter-balance.

By dispensing with levers for effecting the connection between the scale-pan and its counter-balance, I produce a very simple, compact, and durable scale adapted for household use, which can be made very accurate at a moderate cost. Its scale-pan, being supported above the counter-balance instead of below it, is devoid of side rods projecting above it, and, therefore, can be used to weigh articles of any size—as, for instance, a large plate containing any article for home consumption.

To weigh an article in a plate or other utensil, the latter may be placed on the scale-pan, and the nut of the adjustable hanger manipulated to cause the index to point to the cipher on the index-plate; then the article may be placed in the utensil and weighed irrespectively of the latter.

I do not confine myself to an adjustable hanger suspending the counter-balance. In lieu thereof I may with equal advantage employ an adjustable connection between the counter-balance and the scale-pan, as may be understood by turning the accompanying drawing upside down, and imagining the scale-pan D to be a pedestal of the scale, and

the pedestal A to be a scale-pan. I may also omit the thus adjustable support entirely, and, in lieu thereof, provide an adjustable support for the index-plate with the same advantages.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a scale-pan, means for guiding it vertically, a counter-balance for said scale-pan, connected therewith without the intervention of levers, and an index, substantially as and for the purpose herein set forth.

2. The combination of the pedestal A, scale-pan D, guides and rods B C for the latter, spring counter-balance H, connected to the latter and to the bridge J, and an index and index-plate, substantially as set forth.

3. The combination of the scale D, guides and rods B and C therefor, spring counter-balance H connected therewith, bridge J, adjustable support I N, and an index, substantially as set forth.

GEO. H. CHINNOCK.

Witnesses:

CHANDLER HALL,

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