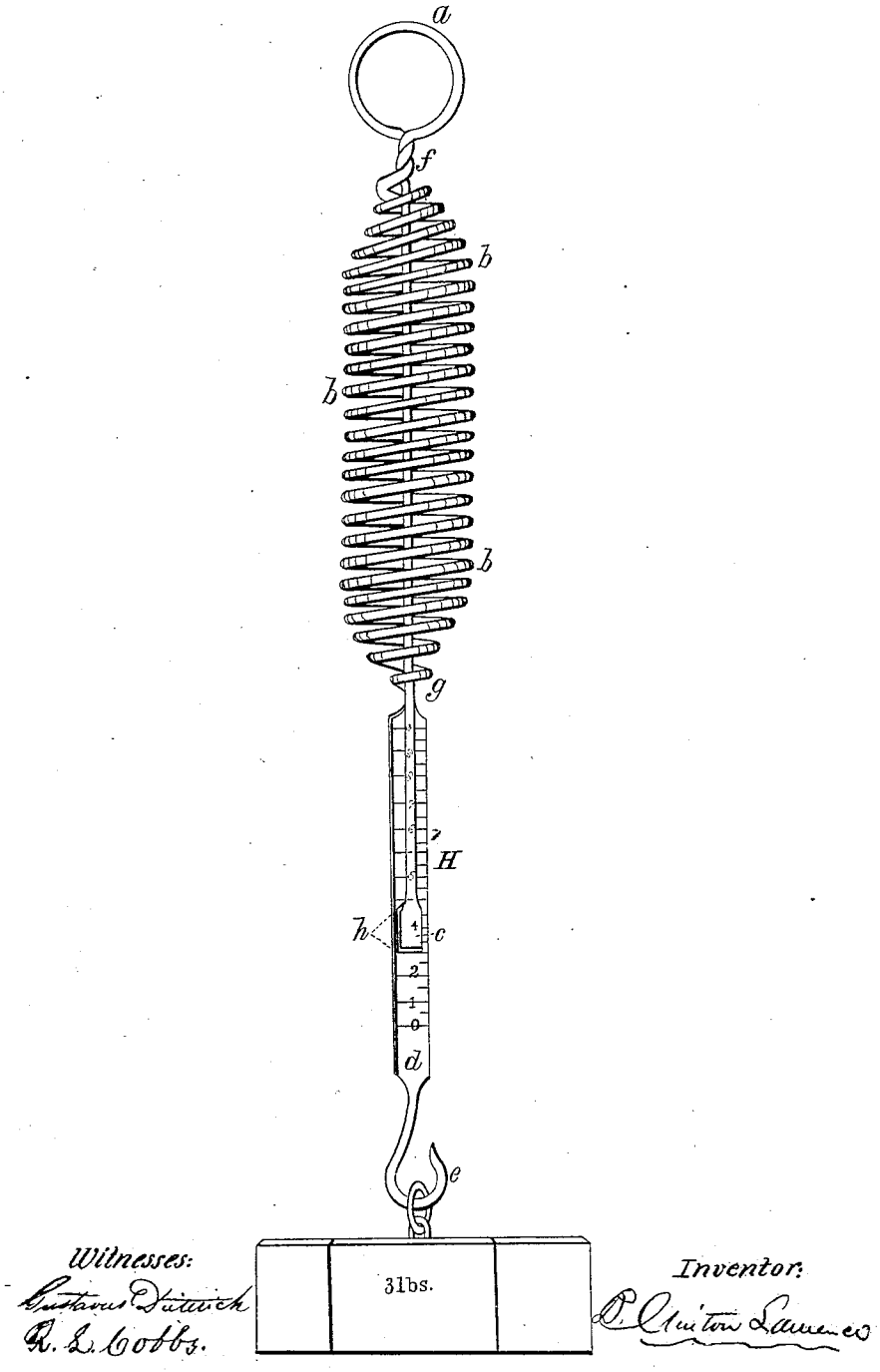
D. C. LAWRENCE.

Spring Scales.

No. 35,125. Patented April 29, 1862.



Witnesses:

Gustavus Dittrich

R. L. Cobbs.

Inventor:

D. Clinton Lawrence

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UNITED STATES PATENT OFFICE.

D. CLINTON LAURENCE, OF CEDAR FALLS, IOWA, ASSIGNOR TO ALFRED E. BEACH, OF NEW YORK, N. Y.

IMPROVEMENT IN SPRING-BALANCES.

Specification forming part of Letters Patent No. **35,125**, dated April 29, 1862.

To all whom it may concern:

Be it known that I, D. CLINTON LAURENCE, of Cedar Falls, in the county of Black Hawk and State of Iowa, have invented a new and useful Improvement in Spring-Balances; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and letters of reference marked thereon.

The nature of my invention consists in the construction of a spring-balance of a single piece of metal so formed that it shall serve the purpose, first, of a handle by means of which to hold or suspend the implement; second, a hook by means of which to sustain or suspend the article being weighed; third, a spring which, by expansion and contraction, shall assist in determining the weight; fourth, a proper place or position upon which to put an index-scale, and, lastly, the purpose of an index-pointer, all of these several parts and the separate functions developed by them being due to the manner in which I dispose and manipulate into permanent position and condition a single piece of steel wire.

In the drawing, *a* is the handle; *b*, the spring; *c*, the index-pointer; *d*, the index-scale, and *e* the hook to sustain the weight.

For the construction of a balance of a capacity to weigh, say, twelve pounds, a steel wire of the size shown by the drawing will be sufficient. Supposing the wire to be three feet in length, and that the operator is about to form the implement, he doubles down one end of it of a length equal to the index-pointer *c*, as shown in the drawing, after having formed the loop or handle *a*. The parts thus doubled, are then twisted together, as at *f* in the drawing. The main portion of the wire which forms the spring *b* is then wound about the index-pointer, the last coil of the wire, as at *g*, being wound so close as to prevent the flattened end *h* of the index-pointer from being drawn into the main coils of the spring in case a weight should be placed upon the hook which exceeded the capacity of the scale, and so tend to unduly expand the spring. From the last coil, *g*, the wire is made to extend down a sufficient distance for an index-scale, as shown, and thence terminates in the hook *e*. Thus manipulated, we will suppose that the lower extremity of the index-pointer rests upon the flattened portion II at the point *o*, indicated in red; then for graduating the scale, say, into pounds and half-pounds, a weight of one-half pound is placed upon the hook and the distance above the point *o* is marked at which the index-pointer rises. An additional half-pound weight is then placed upon the hook, whereupon the index-pointer rises still higher, and the point of rest is marked as before, and so on until the whole capacity of the scale is designated upon said flattened portion. The several half-pound weights are then removed from the hook, whereupon the index-pointer, by the contraction of the spring, will be made to resume its normal position at the point *o*. Lines across the flattened portion II indicate "pounds," and half-lines "half-pounds."

Of course it is evident that a scale thus graduated will thereafter indicate in pounds and half-pounds the weight of an article placed upon the hook *e*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

A spring-balance made of a single piece of wire, substantially in the manner and for the purpose set forth.

D. CLINTON LAURENCE.

Witnesses:

JNO. H. JOHNSON,

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