C. FORSCHNER.

Spring-Balance.

No. 202,807. Patented April 23, 1878.

Fig. II.

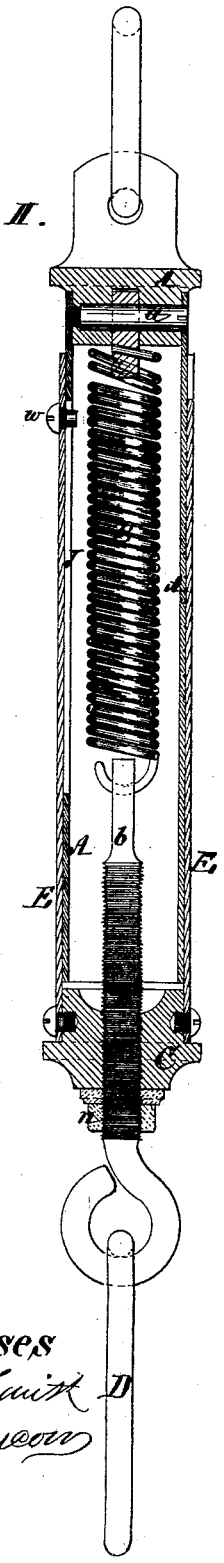
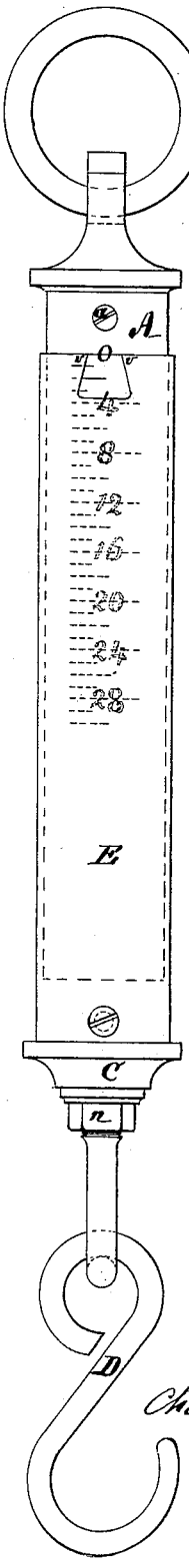


Fig. I.



Witnesses

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CHARLES FORSCHNER, OF NEW YORK, N. Y.

IMPROVEMENT IN SPRING-BALANCES.

Specification forming part of Letters Patent No. **202,807**, dated April 23, 1878; application filed April 3, 1878.

To all whom it may concern:

Be it known that I, CHARLES FORSCHNER, of New York, in the State of New York, have invented a new and useful Improvement in Spring-Balances, of which the following is a specification:

Figure I is a front view of a spring-balance embodying my improvement. Fig. II is a vertical section of the same.

The object of this invention is to dispense with the index-hand and all other projecting parts, whereby the balance could by any means, or unusual rough handling, be damaged; and the invention consists, principally, in marking the index on the inner tubing or casing, and causing the edge of the outer casing to act as the index-hand, and in other details of improvement, hereinafter more fully specified.

In the accompanying drawing, A represents the case, to the upper part of which the spring B is attached, through means of the bolt *a*. The lower end of this spring B connects with a bolt, *b*, attached to a block, C, and to the end of which the hook D, which receives the articles to be weighed, is secured. By means of this screw-bolt *b*, secured or locked through the nut *n*, the required tension of the spring B can easily be regulated.

To the block C a casing, E, is fastened, sliding freely over the case A. The index-scale is marked on the outside of the inner case A, and the upper edge of the outer case E acts as an index-hand or pointer against the scale. In the top of this case E a triangular opening may be cut, leaving sharp points *v* at the upper edge of the case.

On the opposite side of the scale, in the back of the case A, a vertical slot, J, is made through the same, into which the end of the pin *w*, fastened into the case E, passes, and wherein the same can move as the case E moves up and down in conformity with the motion of the spring.

The projecting part of the pin *w*, working in this slot J, serves as a guide to prevent the twisting of the spring B laterally during the operation, and the lower end of said slot J constitutes the stop, and limits the expansion of the spring. This slot J, being made in the inner casing A, will, when the balance is not in operation, and when the same is mostly liable to be damaged, be always covered by the outer case E, thereby preventing any dirt from entering the interior of the balance, in consequence of which the balances, as usually constructed, become very often damaged and deranged.

By dispensing with the index-pointer and all other projecting parts, the displacement and breaking of which generally make the spring-balances useless, I produce an instrument less liable to be damaged by any hard usage than any other similar instrument made for this purpose.

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

1. A spring-balance consisting of the inner case A, outer case E, and spring B, with the index-scale marked or cut upon the face of the inner casing A, in combination with the upper edge of the outer casing E, arranged to operate in the manner and for the purpose substantially as set forth and described.

2. In a spring-balance, the slot J in the inner casing A, in combination with the pin *w*, attached to the outer casing E, substantially in the manner and for the purpose set forth.

CHAS. FORSCHNER.

Witnesses:

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