A. TURNBULL.

Spring-Scales.

No. 152,195. Patented June 16, 1874.

fig. 1

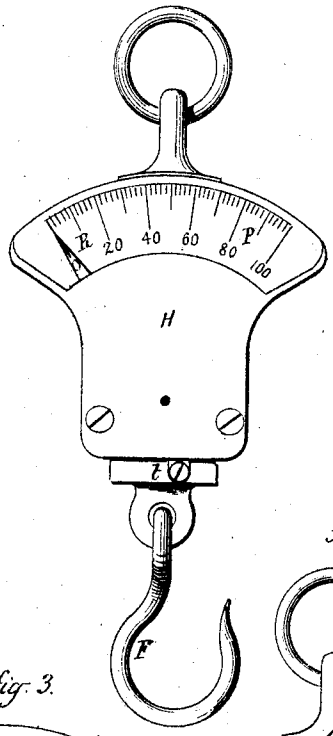

fig. 2

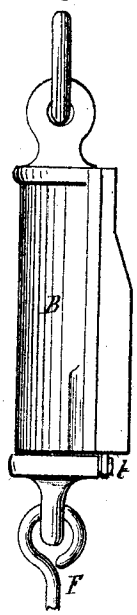

fig. 3

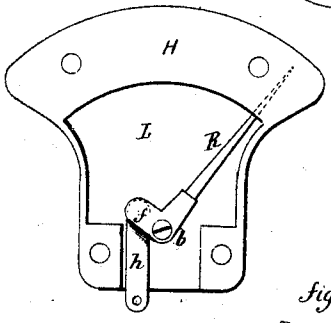

fig. 4

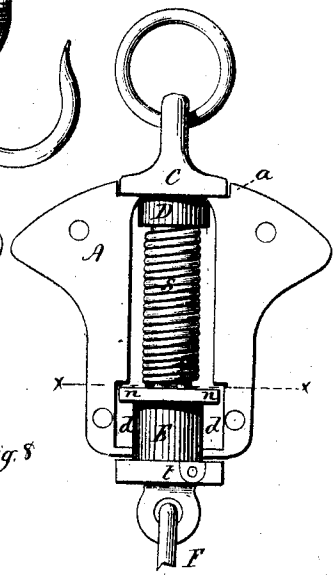

fig. 5

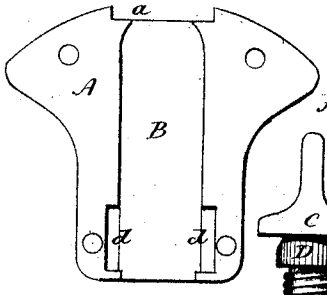

fig 6

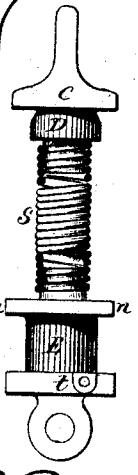

fig. 8

fig. 7

Witnesses.

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ANDREW TURNBULL, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO LANDERS, FRARY & CLARK, OF SAME PLACE.

IMPROVEMENT IN SPRING-SCALES.

Specification forming part of Letters Patent No. **152,195**, dated June 16, 1874; application filed March 18, 1874.

To all whom it may concern:

Be it known that I, ANDREW TURNBULL, of New Britain, in the county of Hartford and State of Connecticut, have invented a new Improvement in Weighing-Scales; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view; Fig. 2, a side view; Fig. 3, an inside view of the front plate; Fig. 4, the front with the plate removed; Fig. 5, a front view of the shell; Fig. 6, the mechanism detached; Fig. 7, a transverse section on line *x x*.

This invention relates to an improvement in that class of weighing-scales known as pendent scales—that is to say, a scale with a hook upon which to place the thing to be weighed, and a ring or eye to support the scale, and a pointer in connection with the hook-spindle, which will indicate the weight suspended on the hook—the object of the invention being to simplify the construction and produce a scale of considerable capacity at a very small cost; and it consists in constructing the shell or case with a recess to receive and support the mechanism of the scale, as more fully hereinafter described.

A is the shell, (shown detached in Fig. 5.) This is a flat plate, in the center of which is a vertical cavity, B, the cavity contracting at the top, and a shoulder, *a*, formed at the top, and recesses *d* in each side at the bottom, as seen in Fig. 7. C is the head, formed as seen in Figs. 4 and 6, so as to set onto the shoulder *a* in the shell, and a projection, D, below to set into the upper end of the cavity B, and lock beneath the contracted portion of the cavity, as seen in Fig. 4, so that when set into that position it will be held by that peculiar construction. To the lower end of the head a spiral spring, S, is attached. At the bottom of the shell the hanger E is set into the cavity, with an arm, *n*, upon each side, extending into the recesses *d* in each side, which will prevent the hanger from turning, but yet will allow it to play freely up and down. To the upper end of this hanger the lower end of the spiral spring is attached, so that by pulling down on the hanger the spring will be extended in proportion to the power applied thereto. The spring is secured to the head and hanger by casting a spiral groove in each corresponding to the coils of the springs, so that the head or hanger may be screwed into the spring the required extent, and thus held firmly in connection with the spring and each other. The hanger E is fitted with a hook, F, or other suitable device, by which to suspend the thing to be weighed. H is the face-plate or cover. (Shown recessed in Fig. 3, and in transverse section, Fig. 8.) A cavity, L, is formed in the plate, opening through the top to the segmental dial P, as seen in Fig. 8. In this cavity the pointer R is hung, as at *b*, and from an arm, *f*, upon the pointer, a rod, *h*, extends, and connects this arm with the hanger at *t*, so that as the hanger is drawn down the pointer will be drawn accordingly, indicating the extent drawn down upon the graduated dial. The face or covering plate H is secured to the shell A by screws or other suitable device.

In this construction the shell and its plates are each cast complete, and require no considerable mechanical labor to fit them together. The head and hanger are also cast to exactly the desired form, and require that simply the spring be attached to each, and the head, hanger, and spring may be finished complete and independent of the case, and introduced therein at pleasure, or removed therefrom for repairs or other purposes.

This construction so far simplifies the construction of the scale as to reduce materially the cost of manufacture.

I claim as my invention—

The shell A, formed with a cavity, B, contracted at its top to shoulders *a*, combined with the head C, its neck corresponding to the contracted shoulders *a* of the shell, the spring S, and hanger E, all substantially as set forth.

Witnesses: ANDREW TURNBULL.

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