(No Model.)

A. TURNBULL.

WEIGHING SCALE.

No. 322,870. Patented July 21, 1885.

Fig. 1.

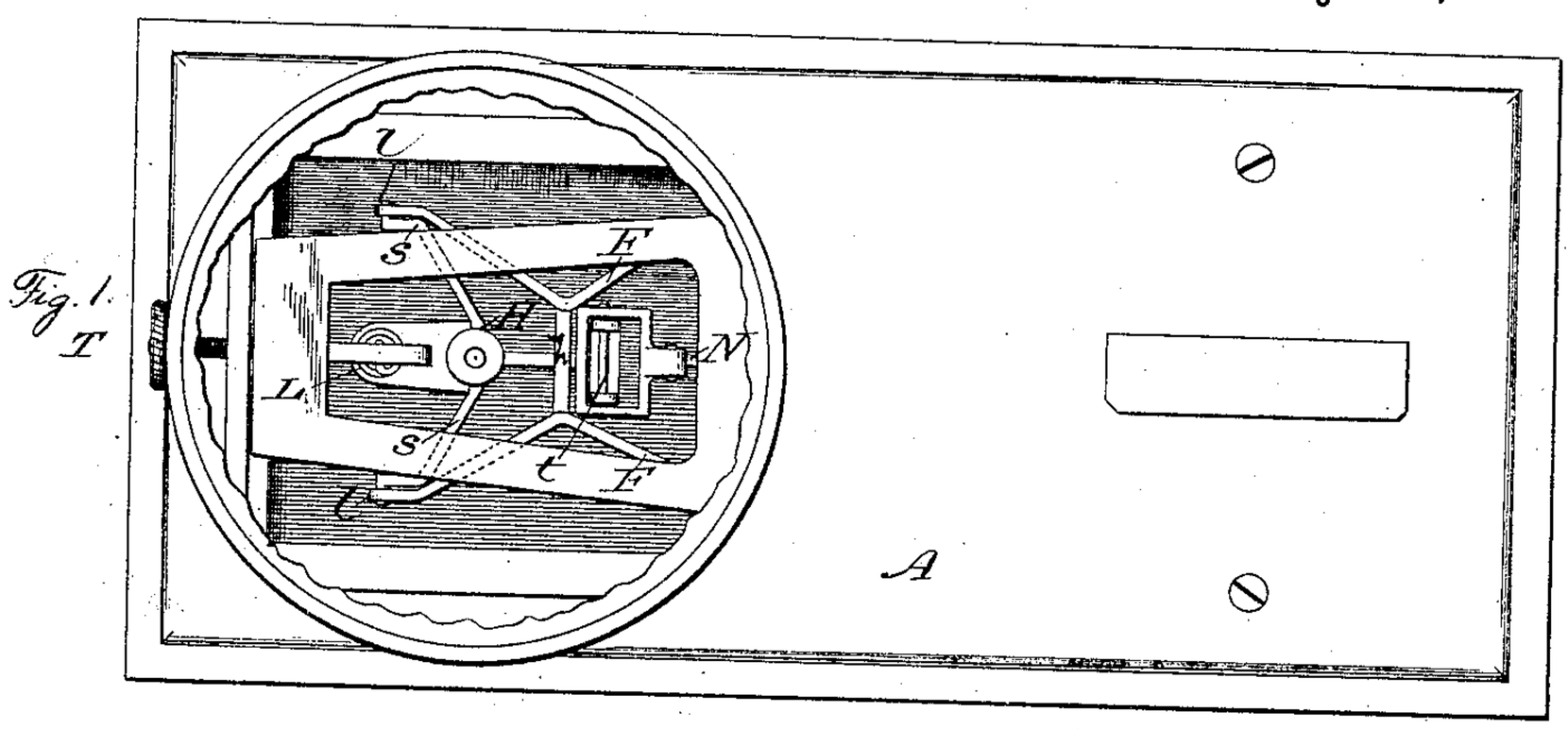


Fig. 2.

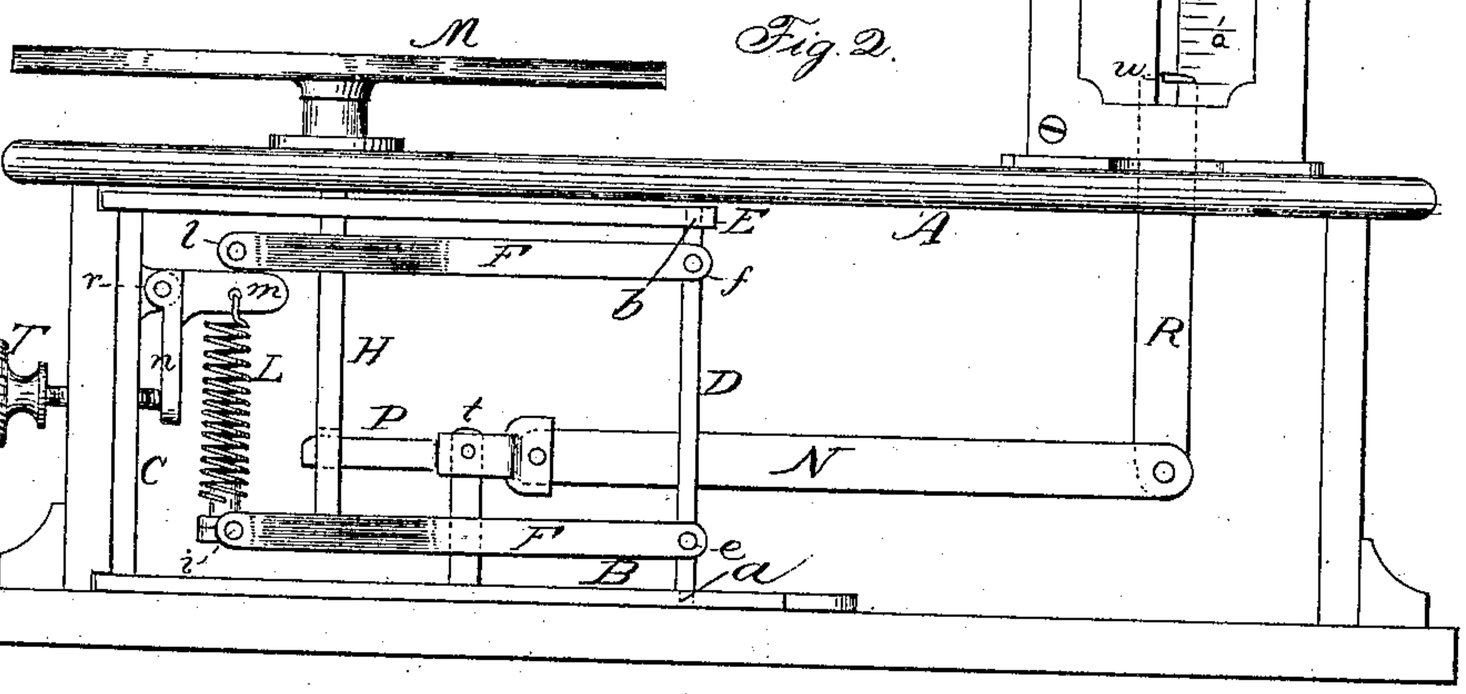


Fig. 5.

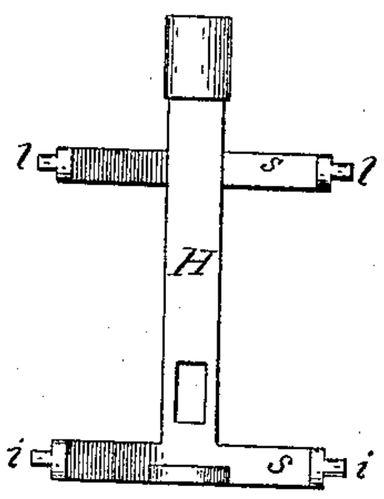


Fig. 3.

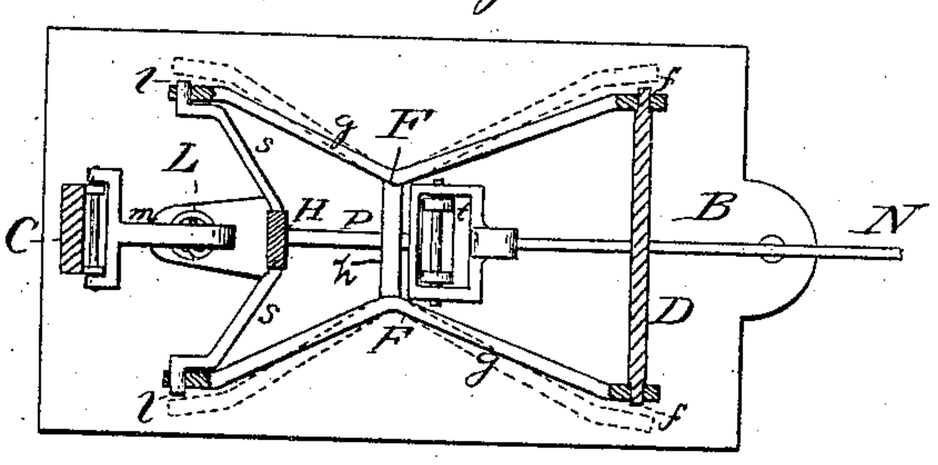
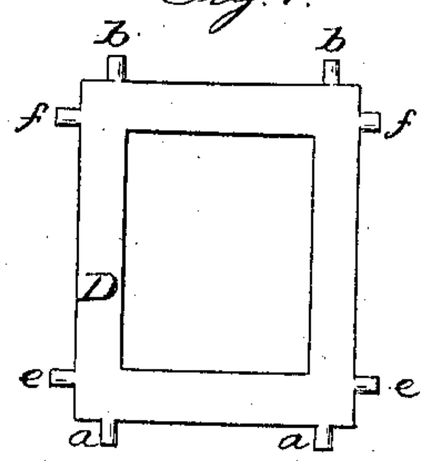


Fig. 4.



Witnesses.
Lillian D. Kelsey.
L. C. Tooker.

Andrew Turnbull
Inventor.
By Atty.
Thos. G. Orwig.

UNITED STATES PATENT OFFICE.

ANDREW TURNBULL, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO WILLIAM I. FELDING, OF SAME PLACE.

WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 322,870, dated July 21, 1885.

Application filed August 9, 1884. (No model.)

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 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 top view, part of the platform and the top of the case removed to show a top view of the mechanism within the case; Fig. 2, a sectional side view of the same; Fig. 3, a view of the mechanism, the top plate removed, showing a section of the links through the trunnions; Fig. 4, the post D; Fig. 5, the upright H.

This invention relates to an improvement in that class of weighing-scales of a platform character, and in which an indicator is employed to show the weight of the article on the platform specially designed for measuring liquids, the object of the invention being a simple and cheap construction adapted to set upon a counter and upon which a measure containing liquid may be readily set and the weight of its contents determined; and the invention consists in the construction as hereinafter described, and more particularly recited in the claims.

The mechanism of the scale is inclosed within a case, A. This mechanism consists of a bed-piece, B, with a post, C, at one end, and D at the opposite end, connected across the top by a plate, E. The post D, as seen in Fig. 4, is cast with studs *a* upon its lower end, and like studs, *b*, upon its upper end, which extend through corresponding holes in the base B and plate E, and riveted down upon the reverse side secures the plates together at that end.

On each of the two sides of the post D a trunnion, *e*, is cast near the bottom, and a like trunnion, *f*, upon each side near the top.

F F are two parallel links. These links consist of two bars, *g g*, connected across midway of their length by a cross-bar, *h*, their two ends disconnected. At one end the bars *g* are pierced, corresponding to the studs *f* on the post D, and in casting are distant from each other a little more than the width of the post D plus the length of the trunnions *e f*, as seen in broken lines, Fig. 3. The two links are arranged one above the other, and their ends set on over the respective trunnions *e f*, as seen in Figs. 2 and 3, the arms bent toward each other so as to close upon the respective trunnions, those trunnions forming pivots upon which the links may turn. The opposite or free ends of the links are connected by an upright, H, fitted with trunnions *i* at its lower end and *l* at its upper end to correspond to holes pierced in the free ends of the links, and upon which the links are set, as shown; hence in an up-and-down movement of the upright H parallelism is maintained by the links F F.

On the post C a bell-crank lever, *m n*, is arranged, as at *r*. To the horizontal arm *m* one end of a helical spring, L, is attached. The other end of the spring is attached to the upright H. The upright is constructed as a post, from which arms *s* extend to the right and left, terminating in trunnions *l i*, the upright extending up through the top of the case and there fitted with a platform, M. Any depression of the platform M will be resisted by the spring L in like manner as in weighing-scales of this class.

N is the beam hung upon a fulcrum, *t*. Its shorter arm P engages the upright H, and so that a depression of the platform M will raise the free end of the beam N. From that free end a rod, R, extends up through the top of the case, carrying a pointer, *u*, which passes over a graduated vertical scale, *v*, the said scale indicating the extent of depression of the platform.

To adjust the spring, a set-screw, T, passes through the end of the case and through the post C against the arm *n* of the spring-lever, and so that by turning the screw to raise the arm *n* the power of the spring will be increased, and vice versa.

The upright H may be cast with its trunnions, as described, for the post D, and as seen in Fig. 5. The base and the top plate may also be cast with their respective holes to set upon the studs upon the top and bottom of the respective posts, the studs being riveted down when the parts are set together.

The graduation of the scale is designed to

indicate liquid-measure—say, one quart, two quarts, three quarts, &c.

By making the post D with the trunnions *e f* formed as an integral part thereof, which is done in the process of casting, and making the links open so as to be closed upon the trunnions, a large percentage of the mechanical labor usually required in the manufacture of this class of scales is avoided, and an accurate, durable, and cheap scale produced.

I do not wish to be understood as claiming, broadly, a scale composed of parallel links hung at one end upon fixed bearings, and by the other end to a vertical upright upon which the platform rests, with a spring and indicator, as such, I am aware, is not new; but

What I do claim is—

1. In a weighing-scale substantially such as described, the combination of the post D, constructed with the trunnions *e f* as an integral part thereof, the parallel links F, having their two arms pierced corresponding, respectively, to the said trunnions *e f*, and closed upon the said trunnions, the base B, and top plate, E, connected by said post D and the post C, the free ends of the links hung to the upright H, the platform M, resting on said upright, the spring L, hung to suspend said links, with a beam and indicator, substantially as described.

2. The combination of the base B, top plate, E, the two posts C D, connecting said base and top plate, said post D constructed with the trunnions *e f* as an integral part thereof, the parallel links F F, pierced at one end and closed upon said trunnions, the upright H, connecting the free ends of said links and carrying the platform, the spring L, bell-crank lever *m n*, adjusting-screw T, beam N, and indicator, substantially as described.

ANDREW TURNBULL.

Witnesses:
JOHN E. EARLE,
LILLIAN D. KELSEY.