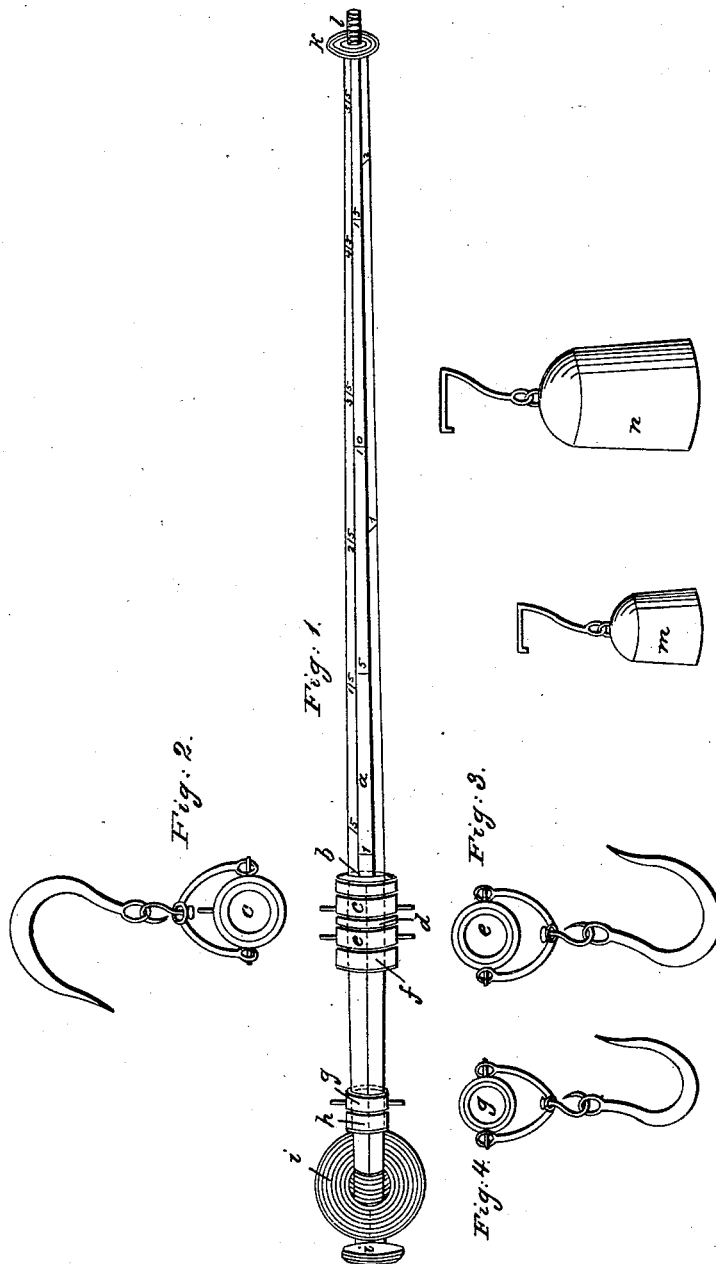


E. WILLEMIN.

Scale Beam.

No. 2,224.

Patented Aug. 21, 1841.



UNITED STATES PATENT OFFICE.

ELI WILLEMIN, OF LEESBURG, OHIO.

STEELYARD FOR WEIGHING.

Specification of Letters Patent No. 2,224, dated August 21, 1841.

To all whom it may concern:

Be it known that I, ELI WILLEMIN, of Leesburg, in the county of Carroll and State of Ohio, have invented a new and useful

5 Improvement on the Steelyard or Balance; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification; in which—

Figure 1 is a perspective view of a steelyard without the hooks and bows; Fig. 2 is the first (or index fulcrum) with its bow and hook; Fig. 3 the second, and Fig. 4 the third fulcrum, with their bows and hooks.

The nature of my invention consists, in making the fulcrums so as to revolve on the yard, or lever, by which means they may be so placed as that the same steelyard, or balance, will weigh any quantity (small or great), that may be desired.

To enable others skilled in the art, to make and use my invention I will proceed to describe its construction, and operation: I make the yard, or lever, half an inch square at the flange or shoulder next the fulcrums, then a regular taper so as to leave it one fourth of an inch square at the end of the yard to the right, when suspended by the left hand, as shown at, *a*, Fig. 1, in the accompanying drawings. The yard, or lever, is thirty inches long, with a round shoulder, or flange *b*, six and a half inches from the left end (when suspended as above described); against this flange or shoulder, the first or index fulcrum *c c*, Fig. 2 rests, and revolves on the yard. The fulcrums are made round, with a hole through them to fit the yard, and two steel pivots opposite to each other on the ring at its greatest diameter; these pivots are made sharp on one side, and hardened so as to avoid friction, between the pivots, and the bows that work on them. Between the first and second fulcrum, a small washer *d*, is placed on the yard, one fourth of an inch thick and of the same diameter as the body of the fulcrums; against this washer the second fulcrum, *e e*, revolves; these fulcrums are secured to their place by the collar, *f*, which is made permanent by riveting down a small shoulder left on the yard, (or lever) for that purpose. Three inches from the collar *f*, is another shoulder or offset, on the yard, made by de-

creasing the size of the yard from this to the end of it, against this shoulder or offset, a third fulcrum *g g*, rests and revolves in the same manner as the two first described, this fulcrum is secured in its place by a collar *h*, and two balls *i i*, that are riveted on at the end of the yard; these balls are made of such size as to balance the opposite end of the yard, or lever, with the small ball *k* thereon when suspended by the pendant or (first) hook; on this end of the yard a screw *l* is cut two inches long upon which the ball *k* is screwed up or down, so as to cause the steelyard, or balance, to hang in equilibrium.

For each steelyard or balance, I have two poises one of which weigh two pounds, the other eight.

I finish three sides, or squares, of the yard (or lever) *a*, in the usual manner with niches and figures; two of them to agree with the small poise *m*, and on these two sides only is it used in weighing; the third side or square I finish to agree with the weight of the large poise *n*, this side weighs pounds only.

In all cases when weighing I suspend the steelyard by the hook attached to the principal or index fulcrum *c c*, Fig. 2, the pointer of which indicates the square or level of the yard. In weighing light bodies I suspend them to the hook farthest from the one just described, and those that are heavier to the one nearest to the one first described, when by turning the yard around one fourth of a circle it is again ready to receive the poise for weighing. When weighing bodies that are still heavier I turn the yard another fourth of a circle, suspend to the same hook as before, and use the heavy poise, leaving off the light one.

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

The application of revolving fulcrums to steelyards and balances by means of which the same steelyard or balance may be made to weigh any quantity small or great.

Although the above specification describes a steelyard of a particular kind size, and proportions yet these may all be varied to suit the taste or purpose of the maker.

ELI WILLEMIN.

Witnesses:

JOHN L. ADAIR,
THOS. S. SMITH.