(No Model.) 2 Sheets—Sheet 1.

W. H. STEWART.

SCALE BEAM.

No. 565,519. Patented Aug. 11, 1896.

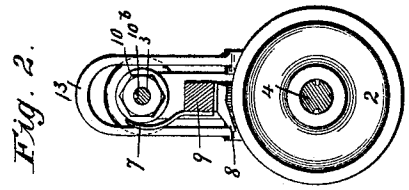

Fig. 2.

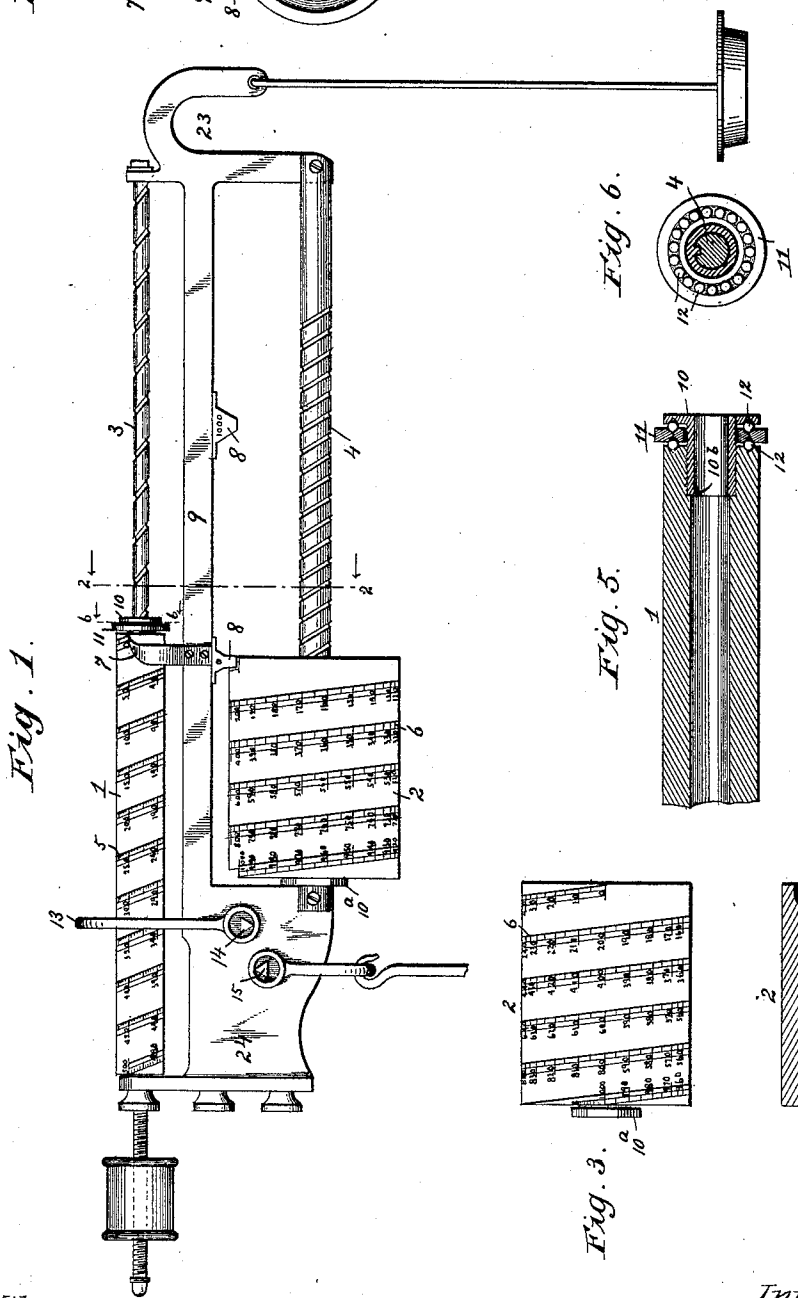

Fig. 1.

Fig. 6.

Fig. 5.

Fig. 3.

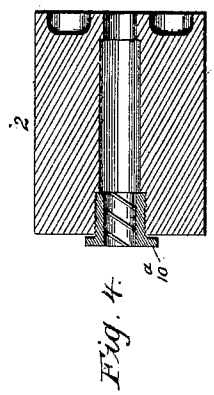

Fig. 4.

Witnesses:

M. R. Remley.

Baur & Strother

Inventor

W. H. Stewart

(No Model.)

2 Sheets—Sheet 2.

W. H. STEWART.

SCALE BEAM.

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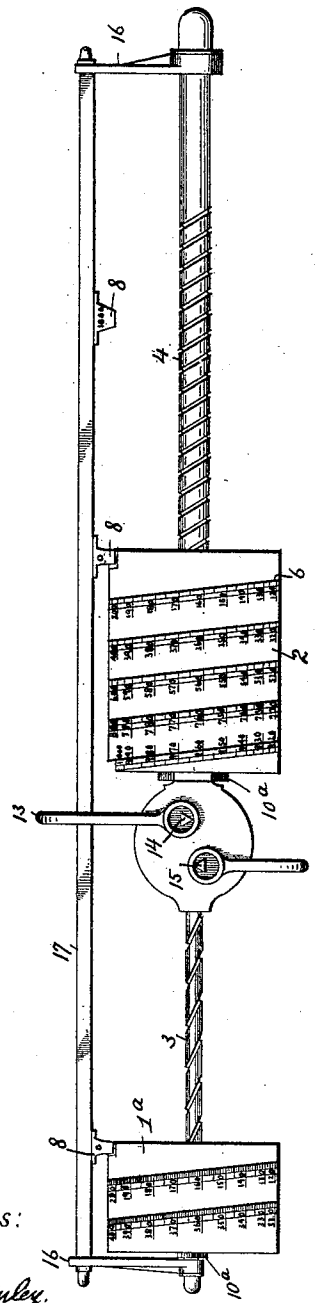
Fig. 2.



Witnesses:

M. P. Remley.

Ben S Stoother

Inventor.

W. H. Stewart

UNITED STATES PATENT OFFICE.

WILLIAM H. STEWART, OF KANSAS CITY, KANSAS, ASSIGNOR TO BENJAMIN H. BARR, OF KANSAS CITY, MISSOURI.

SCALE-BEAM.

SPECIFICATION forming part of Letters Patent No. 535,519, dated August 11, 1896.

Application filed September 23, 1895. Serial No. 563,343. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. STEWART, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Scales, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in scales; and it consists more particularly of the manner in which the indicating-points are arranged upon the balancing-poise, whereby the beam is materially lightened and shortened in length without diminishing its capacity, thereby greatly facilitating the operation of the weighmaster when at work. This desirable feature is obtained by arranging the indicating-points spirally upon the poise, instead of horizontally upon the beam, as is the case with those now in use.

The feature of reducing the weight of the weigh-beam is alone considered of the greatest importance, as it avoids beam-heaviness, which requires undue weight and adjusting at other points of the scale to make the same counterbalance the long heavy beam now in general use.

Referring now to the accompanying drawings, which illustrate the invention, Figure 1 is a side elevation of a compound weigh-beam with poises, representing the indicating-points arranged spirally upon the latter. Fig. 2 is a cross-section of the same, taken on line 2 2 of Fig. 1. Fig. 3 is a detail plan view of the balancing-poise with the indicating-points arranged spirally thereon. Fig. 4 is a longitudinal section of the same. Fig. 5 is a broken longitudinal section of the upper balancing-poise. Fig. 6 is a cross-section of the same, taken on line 6 6 of Fig. 1. Fig. 7 is a side elevation of a single weigh-beam with balancing-poises, showing the indicating-points arranged spirally upon the latter.

In constructing my invention I employ a weigh-beam consisting of two externally-threaded portions 3 and 4 and a flat intermediate portion 9, which are connected at their opposite ends by a head 23 and a shank 24, the latter having the usual fulcrum-points 14 and 15, respectively, the upper one of which is engaged by a hanger 13, that supports the beam in the usual manner.

Operatively mounted upon threaded portions 3 and 4 of the beam are cylindrical balancing-poises 1 and 2, which have their indicating-points 5 and 6 spirally arranged thereon. As poise 2 is about three by three inches in this instance, and the indicating-points make five revolutions thereof, the weigh-beam is only one-fifth as long as it would necessarily be (without increasing its capacity) if the indicating-points were transferred thereto in a horizontal plane.

In order that the proper indicating-points may be easily read when the scale is in use, I provide pointers 7 and 8, which are located upon a centrally-located horizontal bar 9. To further facilitate the reading of the indicating-points, said pointers are terminated at a point just below the upper surface of the poises, thereby bringing the indicating-point squarely in view of the eye without requiring the operator to stoop down, which is necessary when using the old style of beam, which is usually below the line of sight.

In order that the zero-points upon the balancing-poises may be brought in coincidence with the pointers when the poises have reached the limit of their backward movement, I provide them with adjusting-nuts 10 10^a, which are screwed into one end thereof. Adjusting-nut 10^a is internally threaded to receive the threads of the beam upon which it travels.

The operation of poise 1 is facilitated by interposing a washer 11 and ball-bearings 12 between the head of adjusting-nut 10 and the adjacent end of the poise. As said nut contains but a single pin-like projection 10^b for engaging the thread of beam 3, it is made to revolve rapidly with the poise by grasping the washer with the thumb and index-finger and drawing it back and forth over the beam. Beam-heaviness is also greatly reduced by extending beam 3 back through hanger 13, thus bringing a portion of its weight in rear of fulcrum-points 14 and 15, respectively.

Fig. 7 illustrates the poises 1^a and 2 arranged upon a single weigh-beam comprising a rear and front portion 3 and 4, respectively.

Said beam is provided at its opposite ends with standards 16, which support a longitudinal bar 17 above the poises. This bar passes through link 13, and is provided with properly-disposed pointers 8.

What I claim, and wish to secure by Letters Patent, is—

1. In a scale, a cylindrical balancing-poise of central bore having its indicating-points suitably arranged thereon, an adjusting-nut located within one end of said central bore, having internal threads, a weigh-beam which extends through the central bore of the poise, having threads for engaging those of the adjusting-nut, and indicators arranged upon said weigh-beam to intersect the indicating-points.

2. In a scale, a weigh-beam, provided with fulcrum-point and hanger, and also having a cylindrical threaded portion, a cylindrical balancing-poise of central bore having its indicating-points arranged spirally thereon, an adjusting-nut located within one end of said bore, having a pin-like projection for engaging the threaded portion of the weigh-beam, a washer located between the head of the adjusting-nut and adjacent end of the poise, and ball-bearings arranged on each side of said washer between the adjacent end of the poise and the head of the adjusting-nut.

3. In a scale, a compound weigh-beam comprising two threaded horizontal portions, and an intermediate flat portion, connected by a head-and-shank portion, the latter having the usual fulcrum-points and hanger, cylindrical balancing-poises having their indicating-points arranged spirally thereon, which are adapted to operate upon the threaded horizontal portions, one of said poises being so arranged that a portion of it extends through the hanger, and indicators which are properly disposed along the intermediate flat portion of the beam, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. STEWART.

Witnesses:
F. G. FISCHER,
THOMAS JONES.