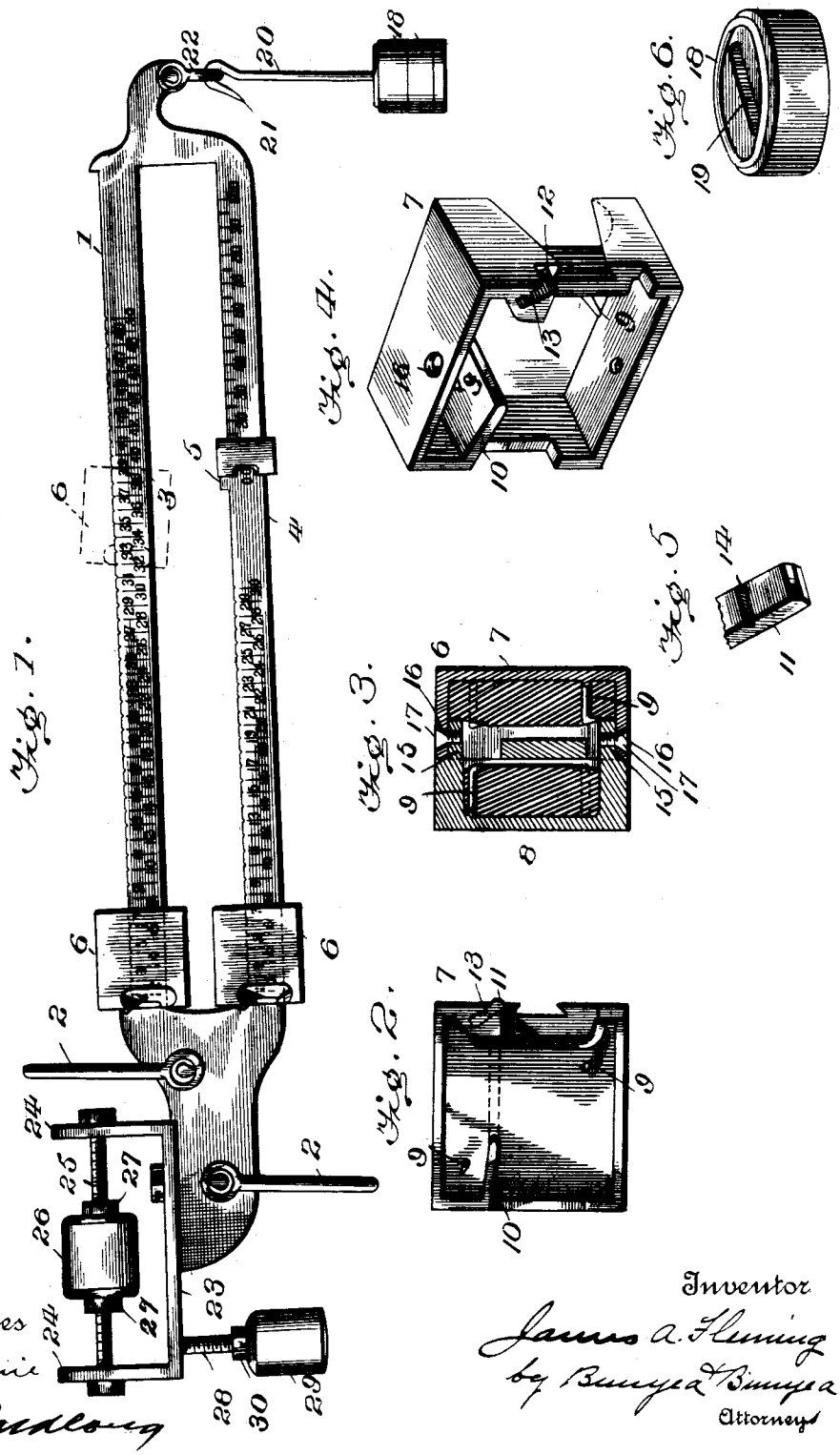
No. 609,880. Patented Aug. 30, 1898.

J. A. FLEMING.

SCALE BEAM.

(Application filed Jan. 11, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JAMES A. FLEMING, OF DANVILLE, ILLINOIS.

SCALE-BEAM.

SPECIFICATION forming part of Letters Patent No. 609,880, dated August 30, 1898.

Application filed January 11, 1897. Serial No. 618,735. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. FLEMING, a citizen of the United States, residing at Danville, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Scale-Beams; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to scales, but more particularly to a compound beam for platform-scales and to certain features of construction in the poises therefor and in the manner of arranging the graduations on said beam, all as will be more fully described hereinafter.

The objects of my invention are, first, to provide a compound scale-beam the graduating-numerals of which are so arranged that the exact weight of any load may be indicated without the use of an unnecessary number of figures on the beam; second, to provide an improved poise for scales which shall possess means whereby the notches in the beam are not readily worn or enlarged by sliding the poise back and forth; also, in the provision of improved means for holding the filling in the poise and in the manner of holding the steel point in the poise without attaching-screws or solder.

A third object of my invention is to provide a governor-balance which permits the use of platforms of various sizes and weights with one size of beam.

I attain the objects referred to by means of the construction shown in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of my scale-beam. Fig. 2 is a side elevation of one part or half of one of my improved poises, showing the interior construction thereof. Fig. 3 is a central vertical section through the poise and one member of the beam. Fig. 4 is an enlarged perspective view of one part of the poise. Fig. 5 is a detail perspective view of the steel point which holds the poise in the desired notch in the beam. Fig. 6 is a perspective view of one of the counterbalance-weights for use on the end hook.

Like numerals indicate like parts wherever they occur in the accompanying drawings.

Referring now to Fig. 1, the numeral 1 designates the scale-beam, which is provided with the usual clevises 2 for balancing the beam. The two members or arms 3 and 4 of the beam form an integral part thereof and are separated for a sufficient distance to permit the sliding poises to be operated without interference one with the other. The upper arm or member 3 is graduated from "1" to "50" in one-hundred-pound notches, while the lower arm is graduated from "1" to "30" in one-hundred-pound notches at the rear end thereof, and the front end of said arm is provided with a fraction-scale for indicating single pounds from "1" to "100." A stop-lug 5 on the lower arm limits the sliding action of both the large and small poises on that arm.

It will be noticed that the one-hundred-pound graduating-numerals on both the upper and lower arms of my beam are indicated by two figures only, and by this arrangement I am enabled to omit the ciphers at the right of the graduations and in this way use larger figures or numerals, thus preventing confusion and enabling the weight of a given load to be easily read, the total weight being in full sight of the operator.

To illustrate, suppose a load weighs three thousand nine hundred and forty pounds. The upper poise is carried forward on the upper beam until it reaches the numeral "39." Then the small poise on the lower beam is carried forward until it reaches the "40" mark. It will now be noticed that through the sight-recesses in the two poises the total of "3940" is indicated. On the other hand, if the load weighs just three thousand nine hundred the small poise is in its rearmost position and two ciphers are shown through the sight-recess. The scaler then puts down the exact figures which he sees. Moreover, it will be observed that the unit or fraction scale is immediately beneath the upper hundred-pound scale, so that the entire weight of the load can be seen by the operator at a single glance, which evidently would not be the case if said fractional scale were located on the solid part of the beam connecting the two

arms or members thereof, as such suggested relative location of the two scales would necessitate the turning of the head to see one scale after the other had been noted.

As shown, the capacity of the upper arm of the beam is five thousand pounds, and if a heavier load is to be weighed the scale at the rear of the lower arm is used. I may use only one-thousand-pound notches on this scale, if found desirable, and in such case there would be but three notches, indicated as "10," "20," and "30."

The poises 6 are made in halves or sections 7 8, molded or cast with integral points or projections 9 and an inclined inner flange or partition 10. To hold the filling in the poises, the points 9 are first bent down to form hooks, after which molten lead is poured in to get the required weight, the hooks serving to hold the filling in place. These sections of the poise may thus be cast without a dry core, and considerable saving in cost of production is a result. When the poise is tilted to the rear, (dotted lines shown in Fig. 1,) it slides on the inclined flange 10 and obviates the rasping and wearing action of the steel point over the notches.

The steel point 11 is held in an inclined recess 12 in the poise-sections by means of a rib or projection 13, extending into the recesses 12 and fitting into a corresponding groove 14 in the steel point. By this construction the use of solder or fastening-screws is avoided.

The section 8 of the poise is provided with outwardly-projecting lugs 15, having perforations which register with similar perforations 16 in the section 7. Screws 17 are used to hold the two sections together.

The counterbalance-weights 18 (shown in Fig. 6) are provided with a central slot 19 of sufficient size to permit the hook 21 of the balance 20 to pass through. These weights are thus only removable when the hook is detached from the clevis 22.

At the left of Fig. 1 a governor-balance attachment is shown. This device consists of a rectangular frame 23, having upright end portions 24. Seated in these upright portions is a horizontal screw-threaded rod 25, upon which is mounted an internally-screw-threaded weight 26. This weight may be moved on the rod and locked in adjusted position by the lock-nuts 27. A vertical screw-threaded rod 28 depends from the frame and carries an adjustable governor-weight 29, which may be locked in place by the nut 30. By the proper adjustment of these weights the weight of the platform may be compensated for whatever its size or weight may be, compensating for a much wider range of variation in sight and size of such platform than is possible with a single weight adjustable horizontally, as heretofore.

It will be noticed that by the use of my beam all the poises are moved in one direction—outward—and that when the large poises are used they are moved toward the small poise. This arrangement is advantageous for the reason that when the large poise is in the proper notch to weigh a load it is located adjacent to the small poise and the scaler may readily get the result of the load at a glance. Furthermore, in moving all the poises outward I am enabled to very quickly balance the beam.

The advantages arising from the use of my poise are many and important. The inclined flange 10, upon which the poise is shifted along the notched beam, prevents wearing of the notches. The points or projections 9 being cast straight permits the sections to be molded without a dry core, and thus lessens the cost of production. The steel point 11 is held in place by very simple and efficient means, and when the two sections are secured together it is tightly clamped in place, but may be readily removed when the sections are separated. This poise may be used with a scale-beam of any desired character or capacity.

I am aware that many changes in form and proportion may be made without departing from the spirit of my invention. Hence I do not desire to be limited to the precise details shown.

I do not wish to be understood as claiming, broadly, a compound scale-beam, or a compound scale-beam in conjunction with counterbalance-weights, or a compound scale-beam in conjunction with a fractional scale, since I am aware that such structures are not broadly new with me; but

What I do believe to be new, and desire to secure by Letters Patent, is—

1. A scale-poise having side walls, one of which walls is provided with an inclined flange projecting toward the other wall, said flange being stationary relatively to said walls and arranged directly to engage the edge of a scale-beam while the poise is being adjusted thereon, as described.

2. A poise made in sections having inclined interior flanges, an inclined recess having an integral rib therein, in combination with a point, having a groove corresponding in shape to the rib, substantially as described.

3. A poise made in sections, having integral points or projections therein bent to hold the filling in place, as described, inclined flanges and a point held in place by a rib and groove, substantially as described.

4. A poise for scale-beams, having side walls, one of which is provided with an inclined flange projecting toward the other, and said other wall being provided with a point, as specified.

5. A poise for scale-beams, made in sections and having inclined interior flanges, projections for holding the filling in place, and a point, for the purposes specified.

6. The herein-described compound beam, consisting of two arms located one directly beneath the other and connected together at their ends, the upper arm having a hundred-

pound scale, and the lower arm having at one end only a scale forming a continuation of that on said upper member and a scale for units and tens formed directly on its outer end, said lower arm also having between its ends means for separating the two scales thereon, a counterbalance at the outer end of said beam, and a governor-balance attachment on the inner end of said beam, said governor-balance attachment consisting of a frame, a weight adjustable horizontally within said frame above said inner end, a rod depending from the bottom of said frame, and a weight adjustable vertically on said rod adjacent to said inner end of the beam, substantially as shown and described.

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

JAS. A. FLEMING.

Witnesses:

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