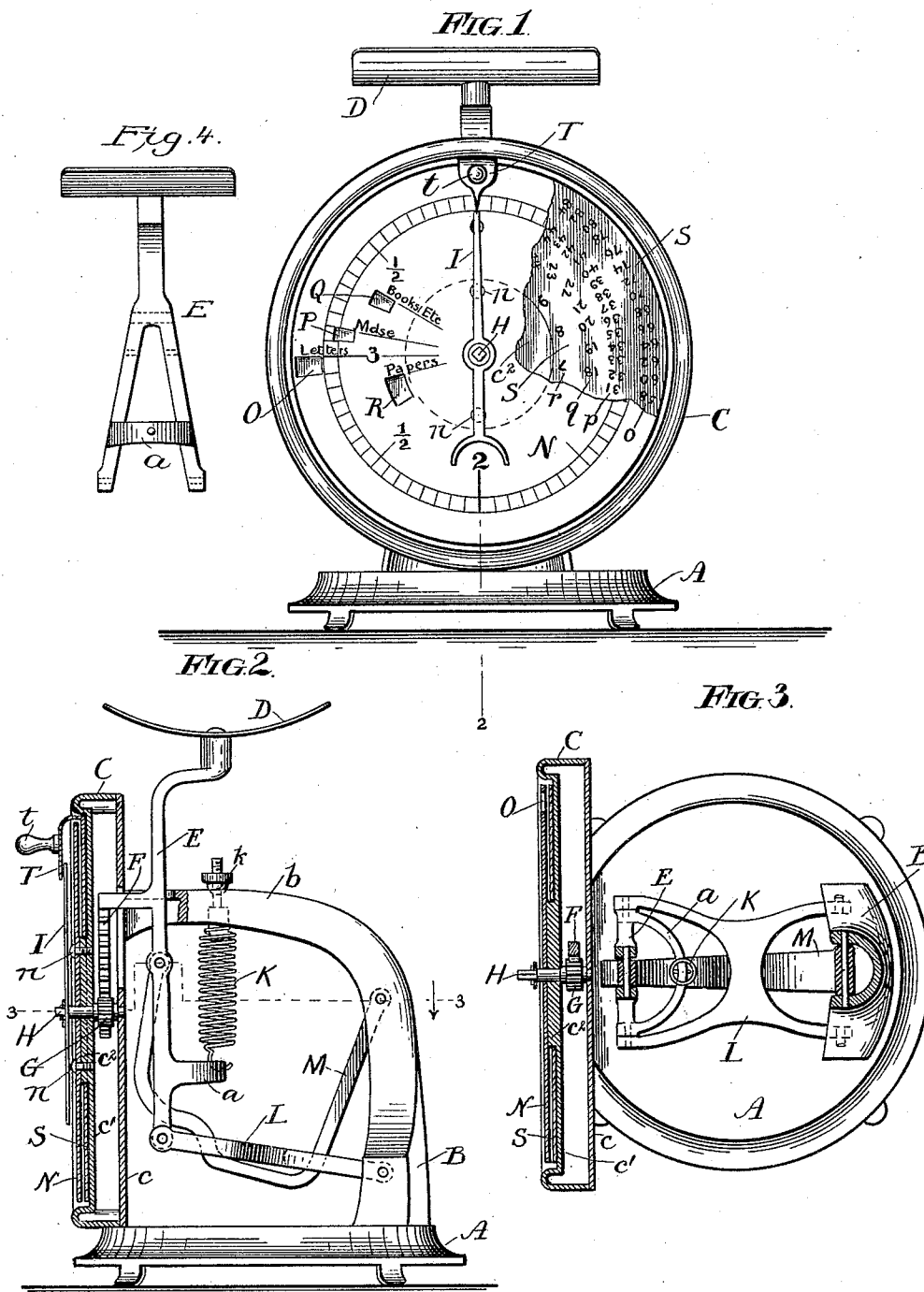


(No Model.)

M. H. HANSEN.
SPRING SCALE.

No. 528,326.

Patented Oct. 30, 1894.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

MARIUS H. HANSEN, OF CHICAGO, ILLINOIS.

SPRING-SCALE.

SPECIFICATION forming part of Letters Patent No. 528,326, dated October 30, 1894.

Application filed September 27, 1893. Serial No. 486,635. (No model.)

To all whom it may concern:

Be it known that I, MARIUS H. HANSEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Spring-Scales, of which the following is a specification.

The subject of the present invention is a spring scale of that variety in which the pan is carried at the upper end of a beam which is maintained in a substantially vertical position by means of "parallel" links, means being provided for transmitting the movement of the beam to an index arranged in front of a scale for showing the weight, a second scale being provided for showing the price of the article weighed.

The invention relates in part to the links for maintaining the beam in upright position, and in part to the scale for showing the price of the article, and the objects of the invention are set forth in the descriptive portion of this specification.

The invention consists in the novel features that are particularly pointed out in the claims, and in order that it may be fully understood I will describe it with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a front elevation of a scale embodying the invention, with a portion broken away. Fig. 2 is a sectional elevation thereof, some of the parts being shown in vertical section on the line 2—2, and the other parts in side elevation. Fig. 3 is a horizontal section on the line 3—3. Fig. 4 is an elevation of the upright.

A represents the base, from which rises a standard B, the upper end of which takes the form of a horizontal arm *b*, the forward end of which is secured to the circular casing C, within which is located the mechanism for imparting movement to the index.

D is a pan secured to the upper end of an upright E which passes through an opening in the forward end of the arm *b* and has attached to it a rack F located between the two plates *c*, *c'*, of the casing C and meshing with a pinion G which is secured to the arbor H of the index I in the customary manner.

The lower part of the upright E is of A-shape, and its horizontal cross-piece *a* projects later-

ally beyond the vertical plane of the main portion of the upright for the purpose of giving an advantageous point of attachment for the lower end of the spring K, the upper end of which is attached to the arm *b* by means of a nut and screw *k*. The upright is maintained in proper position by a pair of links L and M. The link L is bifurcated at both of its ends and is pivoted at one end to the lower bifurcated end of the upright and at the other to the standard B. Ordinarily, each of the links used in scales of this character extends in a straight line from the point at which it is pivoted to the standard B. Ordinarily, each of the links is in fact parallel, but according to the present invention the links are not in fact parallel, albeit they perform precisely the same functions as if they were parallel as above described; that is, they maintain the upright in its proper position and confine it to a "parallel" movement. The upper link M is bowed downward to such an extent that it is substantially U-shape in its general outline, as seen in side elevation. By using a link of this shape the spring is passed without the need of bifurcating the link, and the link is entirely removed from proximity to the lower side of the arm *b*, so that the latter may serve as a handle by which to lift the scale without bringing the hand in contact with the operating mechanism.

N is a disk which is fixed to the casing C by any suitable means, and is provided with a scale, which, in connection with the index, shows the weight of the article. It is also provided, at successively increasing distances from its center, with openings O, P, Q, and R, through which may be seen limited portions of a second disk S, which is mounted so as to be capable of being rotated upon an axis concentric with the arbor of the index. The bearing of this disk consists of a hub *c*², which is either formed upon or attached to plate *c'*, and the disk itself is provided with an opening corresponding in size to this hub. By thus mounting the movable disk upon a hub of large diameter, the disk N may be supported by screws *n* that are driven into the hub *c*², or through it and into the plate *c'*.

To the disk S is secured a pointer T, which projects a short distance inward over the face

of the disk N, and for convenience in turning the disk S a knob *t* is secured to the tongue of metal of which the pointer is made. Opposite the openings O, P, Q, and R the disk S is provided with circular scales *o*, *p*, *q*, and *r*, respectively, one or another of which, when the disk is manipulated as hereinafter described, gives the price of the article weighed, provided said article belongs to one of the several classes of articles for which provision is made.

In the scale as shown in the drawings, provision is made for computing the prices of articles of four different classes, and although, for the purpose of illustration, I have selected four different classes of mail matter, still, I desire to have it understood that the invention is not limited to scales for computing postage, but may be applied to scales for computing the prices of other articles.

The scale shown in the drawings has a capacity of four pounds, and the smallest division of the scale on the disk N is one ounce, no smaller division being required in a scale for weighing mail matter. As shown in the drawings, the words "Letters," "Merchandise," "Books," and "Papers" are arranged upon the disk N near the openings O, P, Q, and R, respectively.

In using the scale, when it is desired simply to ascertain the weight of an article, no attention is paid to the disk S. The article is simply placed upon the pan and the index I automatically points to the weight on the scale of the disk N in the customary manner. When, however, it is desired to ascertain what the postage will be on the article weighed, the disk S is turned until the pointer T is brought opposite to the point of the index. One of the scales on the disk S will then show how much postage is required for the article, the amount being read through one or another of the openings O, P, Q, or R, according to the class to which the article belongs.

It will be understood that where the scale is used for computing the price of merchandise, the appropriate words are substituted for the words shown in the drawings.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a scale, the combination with a standard having the uninclosed arm *b* which is adapted to serve as a handle, of the weighing mechanism having an upright, a link L pivotally connected at one end to the lower end of said upright and at the other end to the

standard, and a link M pivotally connected at one end to the upright and at the other to the standard, said link M being bowed downward between its points of attachment so as to leave between it and the arm *b* sufficient space for the admission of the fingers in grasping the scale to lift it, substantially as set forth.

2. In a scale, the combination with a pan, an index and means for transmitting movement from the former to the latter, of a movable scale, a pointer movable therewith and adapted to be brought into register with the index, and a fixed point opposite which the price may be read on the movable scale, substantially as set forth.

3. In a scale, the combination with a pan, an index, means for transmitting movement from the former to the latter, and a fixed disk, of a revoluble disk located behind the fixed disk and having a scale arranged thereon in a circle concentric with its center of motion, a pointer carried by said revoluble disk and adapted to be brought to register with the index, and a point on the fixed disk opposite which the price of the article may be read on the scale of the revoluble disk, substantially as set forth.

4. In a scale, the combination with a pan, an index, means for transmitting movement from the former to the latter, a fixed disk having through it a number of openings located at different distances from its center, of a revoluble disk located behind the fixed disk and having a number of scales arranged thereon opposite said openings and in circles concentric with the center of motion of the revoluble disk, and a pointer carried by the revoluble disk and adapted to be brought to register with the index, substantially as set forth.

5. In a scale, the combination with a pan, an index, and means for transmitting movement from the former to the latter, of a movable scale, a pointer carried by the movable scale and adapted to be brought into register with the index, and a fixed point opposite which the price may be read on the movable scale, the movable scale and index being without frictional contact with each other so that each may be moved without influencing the other, substantially as set forth.

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Witnesses:

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