No. 817,428. PATENTED APR. 10, 1906.

I. HIRSCH.

SCALE BEAM FOR WEIGHING SCALES.

APPLICATION FILED MAR. 9, 1905.

Fig. 1.

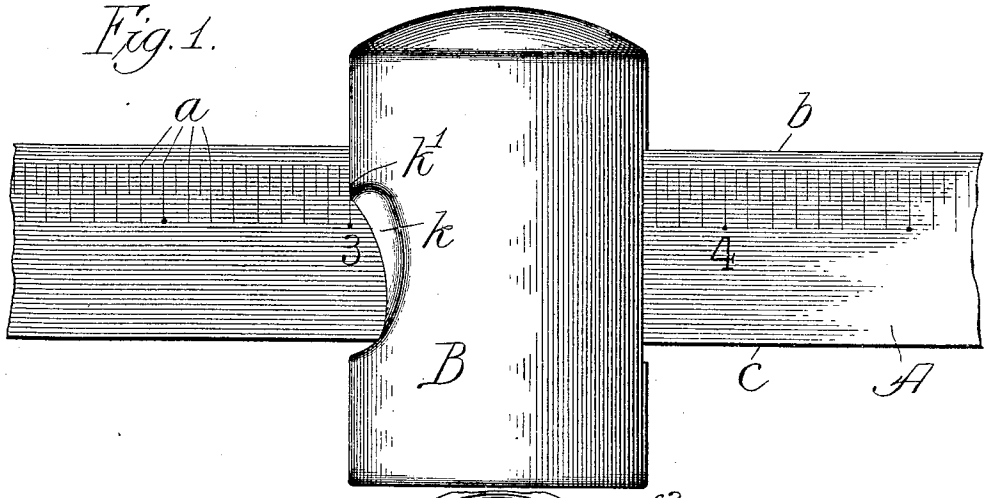


Fig. 2

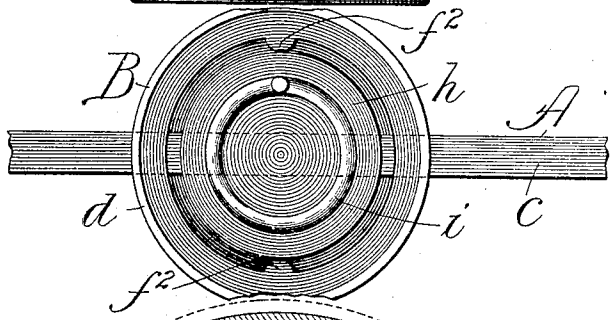
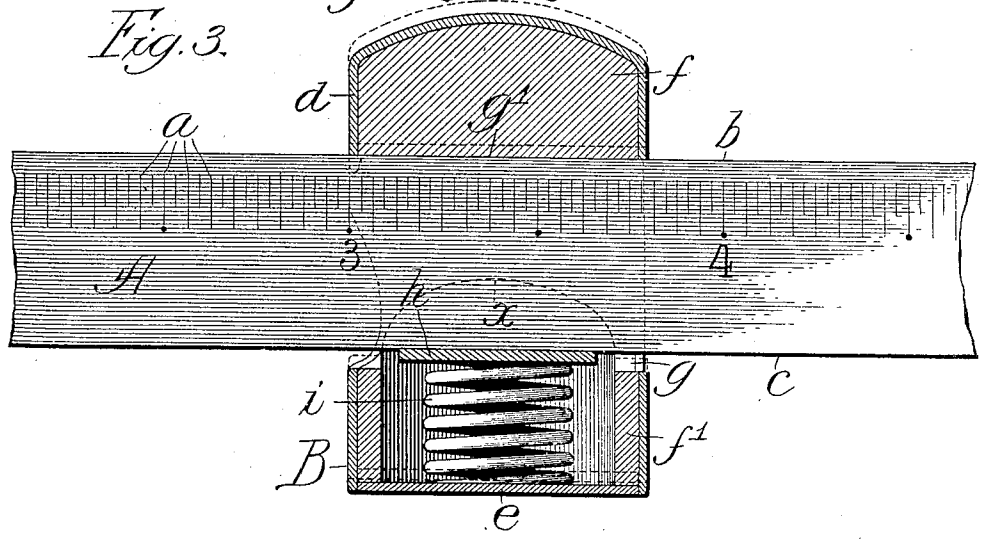


Fig. 3.



Witnesses:
Chas. E. Gaylord.
John Enders.

Inventor:
Isaac Hirsch.
By Dyrenforth, Dyrenforth & Lee,
Att'ys.

UNITED STATES PATENT OFFICE.

ISAAC HIRSCH, OF CHICAGO, ILLINOIS.

SCALE-BEAM FOR WEIGHING-SCALES.

No. 817,428. Specification of Letters Patent. Patented April 10, 1906.

Application filed March 9, 1905. Serial No. 249,195.

To all whom it may concern:

Be it known that I, ISAAC HIRSCH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Scale-Beam for Weighing-Scales, of which the following is a specification.

My object is to provide certain improvements in the construction of the weighing-beam and sliding-weight portions of platform or other scales for the purpose of facilitating quick and accurate adjustment of the weight along the beam and also for the purpose of minimizing the initial cost and subsequent wear of the parts.

In carrying out my invention I provide a scale-beam marked with the desired graduations in a common manner, but devoid of serrations to present smooth upper and lower edges, and a sliding weight upon the beam provided with gripping means of novel construction which while permitting ready adjustment of the weight along the beam tend to hold the weight when adjusted with desired stability.

In the drawings, Figure 1 is a broken view showing only a portion of the scale-beam with the sliding weight thereon in side elevation; Fig. 2, a bottom plan view, the lower spring-retaining disk of the sliding weight being removed to expose the interior construction; and Fig. 3 a view the same as Fig. 1, but showing the sliding weight in section.

A is the scale-beam marked in a usual manner with graduations *a* and formed with smooth (unserrated) upper and lower edges *b c*. The sliding weight B consists of a cylindrical shell *d*, preferably of brass, closed at the top and fitted at its lower end with a disk *e*, which may be soldered or otherwise held permanently in place. The shell *d* is weighted with a filler *f*, of lead or the like, from the top down to the dotted line *x*, Fig. 3, and the lower part of the weight has a continuation of the said filler in the form of a lining *f'* of the same metal, this lining portion being formed with inward-projecting vertical ribs f^2. Cut through the weight is a slot or opening *g* of a width approximating the thickness of the scale-beam A and of a depth somewhat exceeding the width of the scale-beam, as shown in the figures. In the chamber left in the weight beneath the dotted line *x* is a plunger or friction-disk *h*, upward pressed by a spring *i*, confined between the said disk *h* and the fixed bottom plate or disk *e*. The disk *h* slides at diametrically opposite points against the guide-ribs f^2, which thus hold it against lateral play, while permitting slight play in the direction longitudinally of the scale-beam. The shell *d* is formed at opposite edges of the opening *g* at one side with a concavity *k*, the part *k'* of the shell above said concavity forming the pointer portion of the weight, which in the weighing operation is caused to register with the graduated marks *a*. The plunger-disk *h* pressing against the lower edge of the scale-beam grips the latter frictionally to hold the weight with sufficient stability to prevent its sliding under ordinary changes in angle of the scale-beam. Normally the disk *h* and upper surface *g'* of the slot *g* bear against the edges of the scale-beam to hold the weight against sliding, and material force would be necessary to slide the weight when thus engaged. The sliding, however, may be readily performed by the operator pressing his fingers upon the upper edge *b* of the scale-beam and his thumb upward against the under side of the weight to lift the weight to the position indicated by dotted lines in Fig. 3, so that the edge or surface *g'* is raised out of contact with the edge *b*. When the weight is thus raised against the resistance of the spring *i*, it may be very easily slid along the scale-beam.

My improved construction dispenses with the serrations usually provided in the upper and lower edges of a scale-beam. As in perfect scales the serrations must register with the graduated marks, they should be formed with great exactness, which entails comparatively great expense in manufacture. Furthermore, where serrations are provided the weight can only be shifted from one to the other and can occupy no intermediate position between marks for greater accuracy in weighing. The rubbing of a toothed weight over the serrations in scales as hitherto usually constructed after more or less long use tends to wear down the serrations and the tooth of the weight. This objection is not present in my improved construction, and the danger of wear is practically eliminated.

While I prefer to construct my improvements throughout as shown and described, they may be variously modified in the mat-

ter of details of construction without departing from the spirit of my invention as defined by the claims.

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

1. The combination with a scale-beam having smooth upper and lower edges, of a sliding weight fitting said beam and having vertical play thereon, said weight carrying a yielding plunger in frictional engagement with the under surface of the beam.

2. The combination with a scale-beam having smooth upper and lower edges, of a sliding weight fitting around said beam and having vertical play thereon, the said weight carrying a spring-pressed plunger-disk in frictional engagement with the under surface of the beam.

3. The combination with a scale-beam having smooth upper and lower edges, of a sliding weight fitting around said beam and having vertical play thereon, the weight having a chamber beneath the beam closed at its lower side, a friction-disk, and a spring in the chamber pressing the said disk against the under surface of the beam.

ISAAC HIRSCH.

In presence of—
J. H. LANDES,
F. M. WIRTZ.