W. PESTEL.

AGATE MOUNTING FOR BALANCES.

APPLICATION FILED MAR. 5, 1914.

1,128,499. Patented Feb. 16, 1915.

Fig. 1

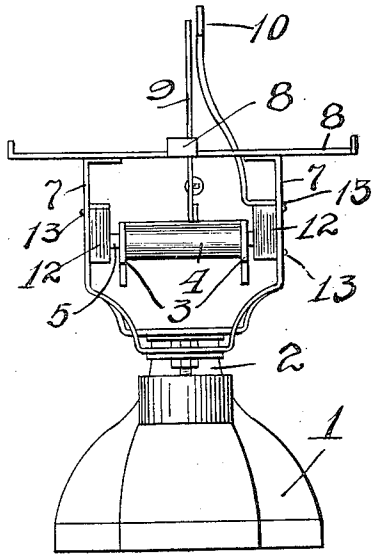


Fig. 2

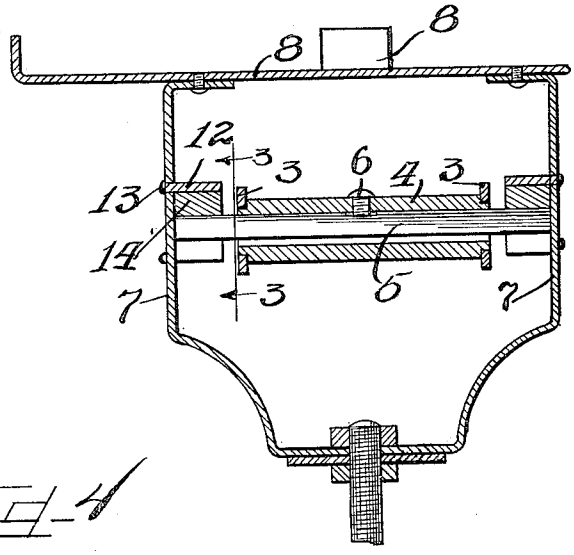


Fig. 3 Fig. 4

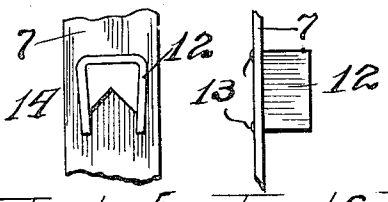
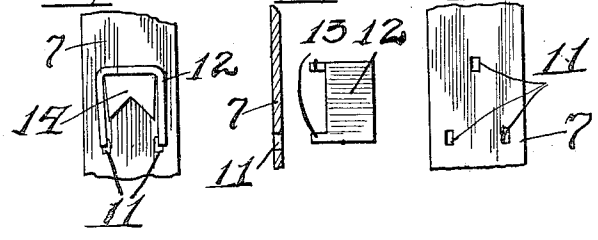


Fig. 5 Fig. 6 Fig. 7



Witnesses

J. W. Angell

Charles W. Hills

Inventor

William Pestel

by Charles W. Hills Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM PESTEL, OF CHICAGO, ILLINOIS, ASSIGNOR TO WOLDENBERG & SCHAAR, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

AGATE-MOUNTING FOR BALANCES.

1,128,499. Specification of Letters Patent. **Patented Feb. 16, 1915.**

Application filed March 5, 1914. Serial No. 822,550.

To all whom it may concern:

Be it known that I, WILLIAM PESTEL, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Agate-Mountings for Balances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

Heretofore in beam balances great trouble has been experienced in properly mounting the agate supports for the respective knife edges or prisms in order that the same shall be perfectly plumb. Generally the agate supports for the knife edges are fixed into the device by cement, and it is a more or less delicate operation to properly set the same.

This invention relates to a means for mounting the agate members of a beam balance in a manner to insure an exact plumb position thereof without inconvenience or loss of time in effecting an adjustment.

It is an object of this invention to provide agate supporting members for a beam balance attachable at the center and ends of the balance without requiring delicate or minute adjustment to obtain an exact setting thereof.

It is also an object of this invention to construct a beam balance in which the agate supports for the knife edges are clamped in position by coöperatively acting members, clamped to interfit one another to insure proper centering of said supports and obviating loss of time in setting the same.

It is furthermore an object of this invention to construct a beam balance, wherein recessed steel or agate supports to receive the knife edges may be mounted perfectly plumb by means of resilient detachable clamping members engaging around the outer surfaces of the supports, said members provided with means to interfit with, and be held in position by other mechanism of the balance having means to coöperate with the engaging means of said clamping chambers.

It is finally an object of this invention to construct a simple and effective beam for accurately and releasably mounting the agate supports of a beam balance in position without necessitating minute adjustment of the parts.

The invention (in a preferred form) is hereinafter more fully described and defined in the accompanying drawings and specification.

In the drawings: Figure 1 is an end elevation of a conventional type of beam balance embodying the principles of my invention. Fig. 2 is an enlarged detail section taken vertically and transversely through a pan carriage at one end of the balance beam. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a side elevation of the device as shown in Fig. 3. Fig. 5 is a view similar to Fig. 3, but with the parts in unattached position. Fig. 6 is a side elevation of the parts as shown in Fig. 5, but detached from one another. Fig. 7 is a fragmentary face view of a metal plate forming a part of the device and to which the agate members are attached.

As shown in the drawings, my invention is shown in connection with a beam balance comprising a base 1, provided with a central upright or standard 2, which supports, by means of agate members and co-acting knife edges, not shown, in this instance, but fully illustrated in detail in the description of the pan carriages, a balance beam comprising the longitudinal parallel bars 3, spaced apart and joined together centrally and at their ends by means of the hollow thimbles 4, through which knife edges 5, extend. An adjusting screw 6, is threaded through said thimbles 4, and engages a recess in said knife edges to clamp the same rigidly within said thimbles.

Pan carriages are mounted at the ends of the balance beam upon the knife edges carried thereby, and said pan carriages comprise a stamped piece of metal, having the vertical walls 7, which, at their upper ends, are flanged inwardly and have secured thereto transverse and longitudinal pan supports 8, which extend at right angles to one another.

An indicating needle 9, is secured to and mounted centrally of the balance beam 3, and in its movement sweeps over a scale 10, which is formed upon the end of an upstanding curved arm, integral with the central bearing of the device.

For the purpose of adjustably mounting the pan carriages upon the knife edges at

the ends of the balance beam, apertures 11, are provided in the vertical walls 7, thereof, and a resilient clamping member 12, provided with an equal number of tongues 13, adapted to engage in said apertures 11, engages around the convergent side walls of an agate member 14, said clamping member then being sprung into position with said tongues inserted through said apertures 11, to hold said agate member rigidly and accurately spaced.

The operation is as follows: When it is desired to insert or remove the agate supporting member 14, the tongues 13, on the resilient clamping members 12, are then engaged or disengaged, as the case may be, from the apertures in the walls of the pan carriages, thus releasing the agate member. Owing to the convergence of the side walls of the agate member, when the clamping member is sprung into place the agate member is held rigidly from movement, and is as well accurately positioned. The same type of co-acting knife edges and agate members are provided at the central support of the balance as described with reference to the balance beam and pan carriages.

I am aware that various details of construction may be varied through a wide range without departing from the principles of this invention. I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. In a device of the class described the combination with agate members having convergent walls, of a resilient sheet metal clamp engaging therearound, and lugs on said clamp adapted to be sprung into the frame members of a scale, said members having apertures therein to receive said lugs to hold said agate members releasably mounted in proper position.

2. In a device of the class described the combination with a balance and its scale beam and frame member, the latter having apertures therein, of agate members having convergent walls, resilient clamping members engaging around three sides of said agate members, and lugs near the ends of said clamping members adapted to engage through the apertures in said scale beam and frame members to hold said agate members tightly clamped in position.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

WILLIAM PESTEL.

Witnesses:
CHARLES W. HILLS, Jr.,
FRANK K. HUDSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."