(No Model.)

E. FINN.

SCALE FULCRUM AND BEARING.

No. 606,529. Patented June 28, 1898.

Fig. 1.

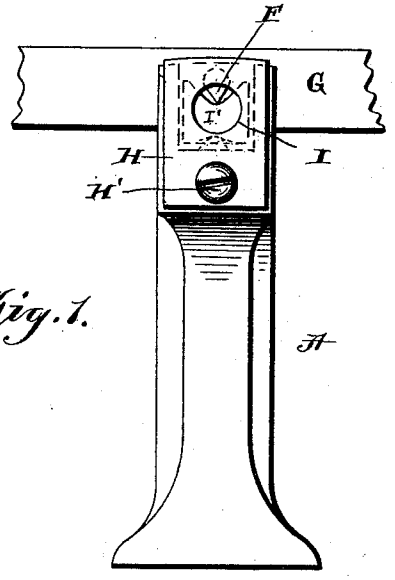


Fig. 2.

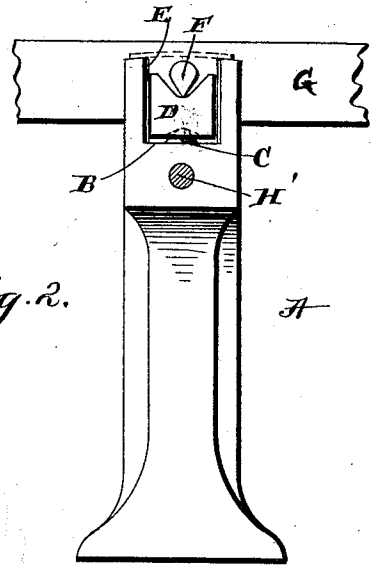


Fig. 3.

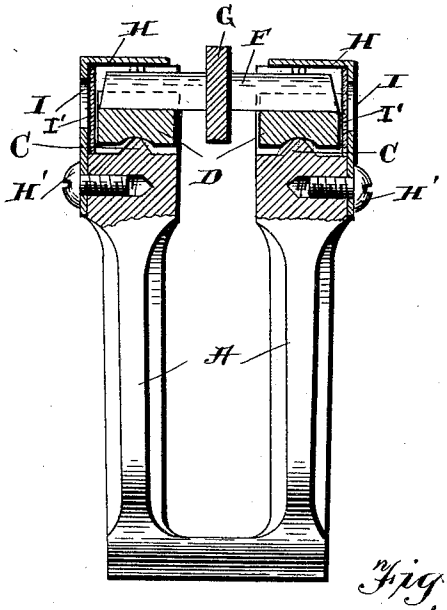


Fig. 4.

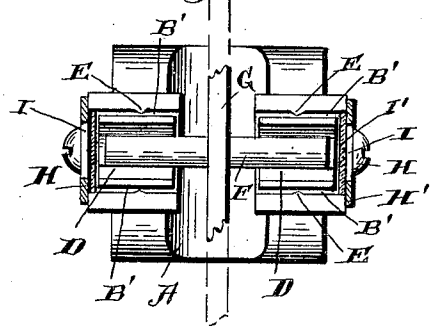


Fig. 5.

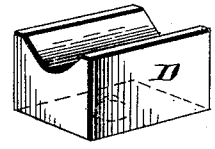
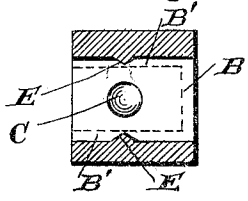


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN FINN, OF ELKHART, INDIANA.

SCALE FULCRUM AND BEARING.

SPECIFICATION forming part of Letters Patent No. 606,529, dated June 28, 1898.

Application filed August 9, 1897. Serial No. 647,601. (No model.)

To all whom it may concern:

Be it known that I, EDWIN FINN, of Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Scale Fulcrums and Bearings; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to a fulcrum-post and bearings for weighing-scales; and the object of the invention is to provide an extremely-sensitive and self-adjusting knife-edge bearing for even-balance and lever scales of any size and character, so that the bearings for opposite knife-edges constantly aline and are also afforded room for slight lateral movement, as may be necessary for constantly maintaining the knife-edges accurately centered, thereby avoiding binding and friction and rendering the scale extremely sensitive and accurate.

The invention consists in the novel features of construction and in the combination and arrangement of parts hereinafter fully described and claimed, and illustrated by the accompanying drawings, in which—

Figure 1 is an elevation of the post and bearing. Fig. 2 is a similar view, the bearing-cup being removed. Fig. 3 is a vertical sectional view. Fig. 4 is a sectional plan view. Fig. 5 is a detail view of one of the bearings. Fig. 6 is a sectional plan view of one of the bearing-posts.

Posts A, which are here shown integrally connected at their lower ends, are bifurcated at their upper ends to form sockets B. These bifurcations or sockets aline with each other transverse the post and are preferably of angular shape. Raised from the transverse center of the bottom of each socket is a nib or cone C, and centered thereon is an angular bearing-block D, having a depression in its bottom where it rests on said nib. The depression is of less depth than the vertical extent of the nib, so that the bottom of the bearing-block is held clear of the bottom of the post-socket. With the bearing-blocks thus mounted it will be seen that they are free to oscillate vertically, as may be necessary for securing accurate alinement and for conforming to knife-edges F of the beam or lever G.

Each bearing-block is narrower than its socket B, so that spaces B′ occur between the block and the vertical sides of said socket, and projecting inward from opposite sides of the latter and in line with nib C are knife-edge projections E. The block rests loosely between those projections, but is held thereby in upright position, and the projections being in line with nib C the horizontal oscillation of the block in centering the scale-beam is in no wise interfered with.

Secured by screw H′ to the outer side of each post A is an angular cap-piece H, which at its upper end overhangs the top of the post and incloses and protects the knife-edge in its engagement with the bearing-block. The vertical portion of the cap-piece is apertured at I and makes visible the bearing-block and the engagement of the knife-edge therewith, so that at a glance it may be ascertained whether said parts are in proper relative position. Glass I′ is held in place over aperture I by cap H and constitutes a stop to receive the thrust of the pivot end if by any chance the beam should be pushed to one side by rough usage, and thus prevents friction which would otherwise occur. Owing to the construction and arrangement of bearing-blocks here shown and described the bearings may be made longer, and being longer are more durable than rigid bearings now in use. With rigid bearings it is extremely difficult and often practically impossible to make the bottom or bearing surface of a groove absolutely straight or level, and the same is true of elongated knife-edge bearings.

Where there is an unevenness, the bearing and consequent friction will be at that point, causing the parts to wear unevenly and preventing an absolutely accurate balance. With the blocks pivoted so as to oscillate vertically and horizontally, the knife-edges have bearing their entire length and without friction and the bearing is rendered extremely durable.

As the form of bearing here shown and described may be used in any suitably-constructed fulcrum-post or other support, I do not desire to limit myself to the particular

form of post here shown; nor is its usefulness confined to the relative vertical position of the parts shown—as, for instance, in an even-balance or trip scale in mounting the scale-pan and weight-platform. I prefer to form the bearing-blocks of agate, although they may be made of steel or other metal, if desired.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An improved scale-bearing, including a bearing-block having a raised central pivotal support upon which it is adapted to oscillate horizontally, the top surface of the block being grooved centrally in direction of its length to receive a scale-trunnion, the block being free to oscillate vertically in direction of its length, and means for holding the block against oscillation in the direction of its width, substantially as shown and described.

2. An improved scale-bearing, including a bearing-block, and alined bottom and side bearings over and between which, respectively, the block is mounted, whereby the same is adapted to oscillate vertically and horizontally, substantially as shown and described.

3. An improved scale-bearing including a support formed with a socket, a bearing-block pivoted centrally above the socket-bottom and of less width than the socket so as to oscillate horizontally therein, the block being capable of free vertical oscillation in the direction of its length, and means for holding the block against vertical oscillation in the direction of its width, substantially as shown and described.

4. An improved scale-bearing, including an angular bearing-block formed with a central bottom depression, a cone bearing upon which the depressed bottom is centered and oppositely-facing upright knife-edge bearings adapted to engage opposite sides of the bearing-block, whereby the latter is sustained in upright position and capable of frictionless vertical and horizontal oscillation, substantially as shown and described.

5. An improved scale-bearing, including a support formed with a socket, a nib raised centrally from the socket-bottom, a bearing-block centered on the nib and of less width than the socket so as to oscillate horizontally therein, the block being grooved centrally on its top from end to end and capable of vertical oscillation in the direction of the length of the groove, and bearings on opposite sides of the block for maintaining the same in upright position and against oscillation in the direction of its width, substantially as shown and described.

6. An improved scale-bearing comprising a bifurcated fulcrum-post having vertical inwardly-extending projections on opposite sides of the bifurcation, and a bearing-block within and of less width than the bifurcation, and centered at a point in line with said inwardly-extending vertical projections, substantially as shown and described.

7. An improved scale-bearing comprising a bifurcated fulcrum-post having vertical inwardly-entending projections on opposite sides of the bifurcation, and a bearing-block between said projections, and centered above the bifurcation bottom, whereby said block is held in upright position and free to oscillate vertically and horizontally, substantially as shown and described.

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

EDWIN FINN.

Witnesses:
CHAS. W. FISH,
E. C. BICKEL.