June 25, 1929. W. CURTIS 1,718,534

SCALE FULCRUM

Filed July 19, 1928.

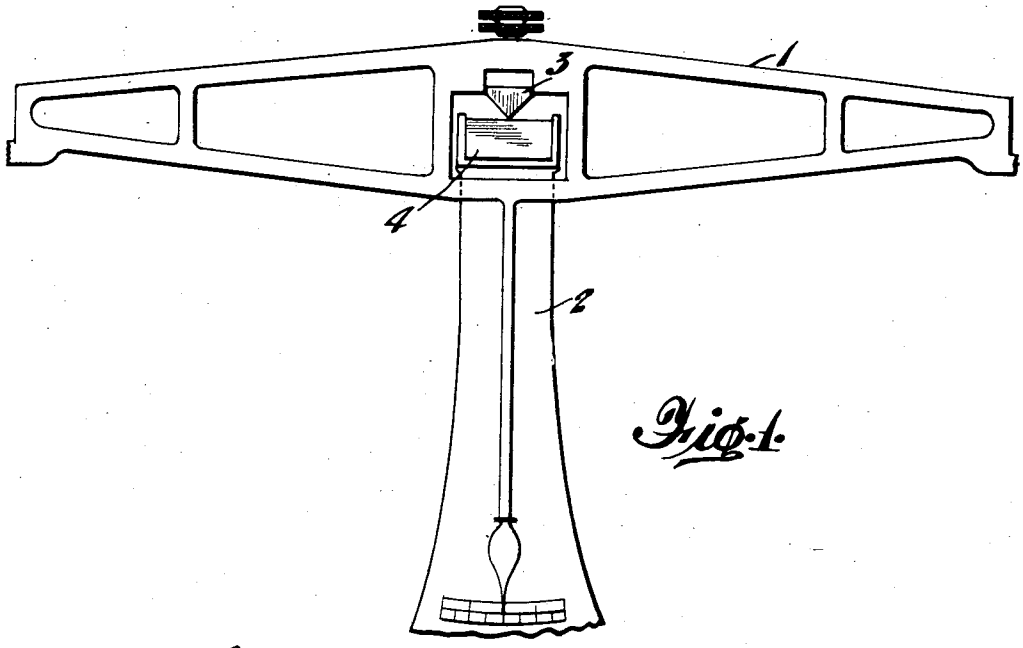


Fig. 1.

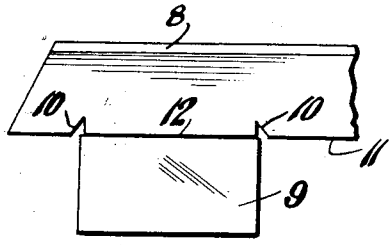


Fig. 2.

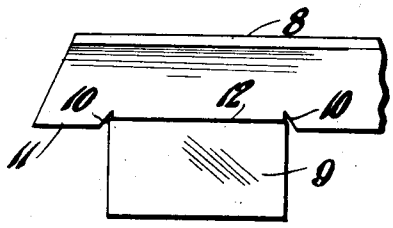


Fig. 3.

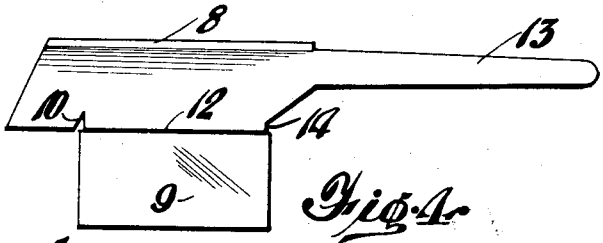


Fig. 4.

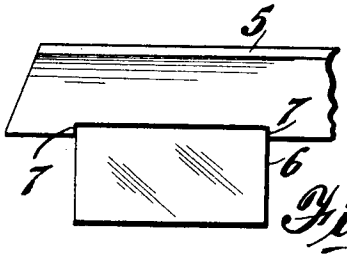


Fig. 5.

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UNITED STATES PATENT OFFICE.

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SCALE FULCRUM.

Application filed July 19, 1928. Serial No. 293,881.

This invention relates to improvements in the steel or agate knife-edge fulcrums or pivots which support scale beams and the like.

The main object of the invention is the provision of a method of eliminating the increased friction and consequent inefficiency caused by the wearing away of the edge of the fulcrum.

Another object is to provide a method which allows the pivots as now in use to be readily improved in accordance with the invention.

A further object is to provide such a method which will be simple, cheap and efficient.

With these and other objects in view, the invention resides in the novel construction and arrangement as hereinafter set forth and claimed.

In the drawing:

Figure 1 is an elevation, partly broken away, of a scale beam and standard equipped with a knife-edge fulcrum as proposed by my invention.

Figure 2 is a side view of my improved fulcrum and its associated plane block.

Figure 3 is a side view of my improved fulcrum and its associated plane block showing the edge of the fulcrum worn away.

Figure 4 is a side view of another type of improved fulcrum and its plane block.

Figure 5 is a side view of an ordinary fulcrum with its edge worn away.

Referring now more particularly to the drawing the reference numeral 1 denotes a scale or balance beam and 2 the standard therefor. The beam 1 and standard 2 are of conventional structure and the said beam is supported on the standard by means of a steel or agate knife-edge fulcrum 3 resting upon the plane block 4 in the usual manner.

In setting forth the invention reference will first be had to Figure 5 in which the numeral 5 represents a knife-edge fulcrum or prison of the form now in use and 6 denotes a plane block. It will be understood that even in the case of a new and unworn fulcrum there will be present a small amount of friction since the fulcrum contacts with the plane block along its edge. However, this friction steadily increases as the scales are used and the knife-edge wears away due to the shoulders 7, formed by this wearing away, contacting with the plane block as will be understood from Figure 5.

In Figures 2, 3 and 4 are shown the method whereby I overcome this added friction due to wear. The fulcrum 8 rests upon the plane block 9 in the usual manner and small notches 10 are formed in the knife edge 11 of the fulcrum 8 in alignment with the sides of the plane block as shown. Thus the portion 12 of the knife edge may wear away as shown in Figure 3 and the notches 10 will allow the remainder or unworn portion of the knife-edge to clear the sides of the plane block. In this manner the added friction is overcome and the fulcrum will function perfectly until the flatness or dullness of the knife edge necessitates its replacement.

In Figure 4 is shown a fulcrum which has a tapered stem 13 and is adapted to be driven into a scale beam or bar (not shown). In this type only one notch 10 is needed since a small shoulder 14 allows for wear upon one side of the fulcrum.

It is obvious that this method of decreasing friction may be used in any machine in which knife-edge fulcrums or pivots are used and such as considered within the purview of my invention.

The drawings, of necessity show the amount of wear as greatly exaggerated for clearness.

While I have herein set forth a preferred embodiment of my invention, it is understood that I may vary from the same in minor details within the scope of the appended claim.

I claim:

In combination, a fulcrum block, a fulcrum having a knife edge bearing on the said fulcrum block, the ends of the said fulcrum extending beyond the sides of the said fulcrum block, the said knife edge having notches or recesses in alignment with the sides of the fulcrum block, whereby the knife edge upon the ends of the fulcrum will not contact the sides of the block as the said knife edge between the notches wears away.

In testimony whereof I affix my signature.

WILLIAM CURTIS.