(No Model.)

# E. BEETON.

## WATCHMAKER'S GAGE.

No. 473,286. Patented Apr. 19, 1892.

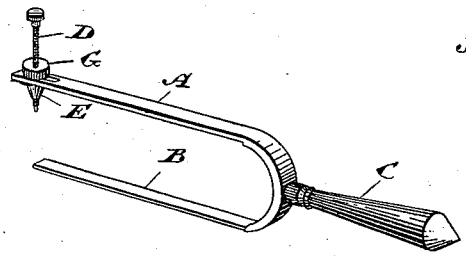


Fig. 1

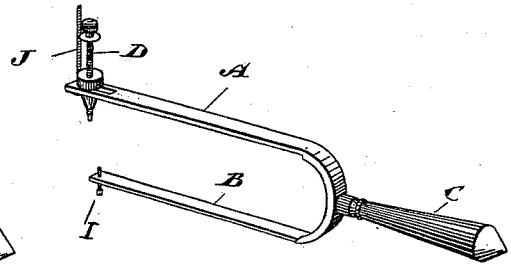


Fig. 2

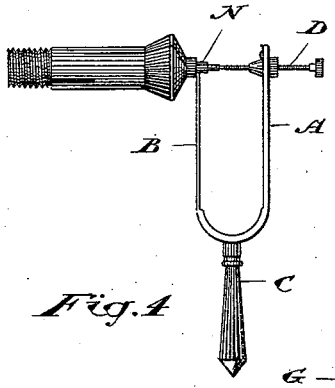


Fig. 4

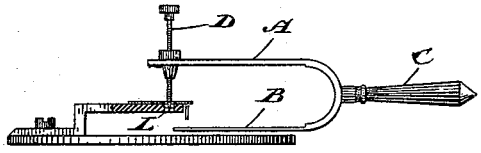


Fig. 3

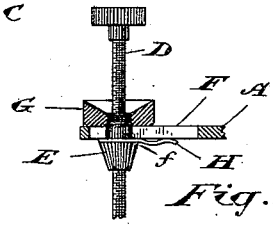


Fig. 5

Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD BEETON, OF TORONTO, CANADA.

## WATCH-MAKER'S GAGE.

SPECIFICATION forming part of Letters Patent No. 473,286, dated April 19, 1892.

Application filed January 16, 1891. Renewed February 25, 1892. Serial No. 422,724. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD BEETON, watch-maker, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented a certain new and Improved Measuring-Tool for the Use of Watch-Makers, of which the following is a specification.

The object of the invention is to design a measuring-tool for watch-makers to use in fitting balance-staffs, pinions, cylinders, &c.; and it consists, essentially, of two parallel arms connected together or formed integral with each other, with a spindle preferably screwed and fitted into a post adjustably connected to one of the said arms in such a manner that the spindle held by the said post shall be at right angles to the parallel arms, the tool being otherwise made substantially as and for the purpose hereinafter specified.

Figure 1 is a perspective view of my improved measuring-tool. Fig. 2 is a similar view of my improved tool provided with a pin for measuring below the surface of a bridge, plate, or other obstruction, and a gage for recording the position of the measuring-spindle. Fig. 3 indicates the application of my improved measuring-tool to secure the proper length of a staff. Fig. 4 indicates the application of my measuring-tool to a staff being prepared. Fig. 5 is an enlarged view showing the post of the measuring-spindle in detail.

In the drawings, A B represent two parallel arms integral with each other and provided with a handle C.

D is a spindle, preferably screwed its entire length and fitted through a hole made in the post E. This post passes through a slot F made in the arm A. A shoulder *f* is formed in the post E to butt against the bottom side of the arm A. A jam-nut G is screwed onto the portion of the post E which projects through the slot F. The tightening of the nut G against the top of the said arm A will of course hold the post in any desired position. A spring H is placed between the bottom surface of the arm A and the shoulder *f*, formed on the post E. This spring forms a tension sufficiently strong to hold the post E steady, but at the same time does not interfere with the adjustment of the post within its slot.

When the measuring-tool is made as shown in Figs. 1, 3, and 4, the measurement is taken between the surface of the arm B and point of the spindle D; but when made as shown in Fig. 2 the measurement is taken between the point of the spindle D and the end of the pin I, which is screwed through the arm B in order that it may be longitudinally adjusted, so as to project more or less through the said arm B, according to the nature of the obstruction it is desired to pass. In Fig. 2 I also show a gage J fixed to the arm A, projecting upwardly parallel with the spindle D, which is used as an indicator to point on the gage J the position of the spindle D. When a spindle has been adjusted to the proper measurement, a glance at the gage J will indicate the proper position of the said spindle D to secure the desired measurement. In this way a measurement once taken may always be recovered without remeasuring the position from which the original measurement was taken.

It is not necessary in this specification to point out the various ways in which my measuring-tool may be used. It is sufficient to explain one of these applications, and for that purpose I show it in Fig. 3 in the act of measuring the proper length of a staff. In securing this measurement the point of the spindle D is placed in the jewel L, and the said spindle is adjusted until the arm B is a proper distance from the plate M. The measuring-tool is then applied to the shoulder on the staff N, as shown in Fig. 4, which indicates a staff N held in the chuck of a lathe. The staff is then turned down until the distance between the shoulder *n* and the point of the staff shall correspond with the distance between the bottom surface of the arm B and the point of the spindle D.

It will be observed on reference to Figs. 3 and 4 that the arm A projects beyond the end of the arm B. This unevenness in length is useful in cases such as shown in Fig. 4, where the arm B must be shorter in order to permit the point of the spindle D to be exactly over the point of a staff N, while the arm B rests

upon the shoulder N of the said staff. The slot *f*, in which the post is fitted, allows the said post to be adjusted in order to apply the point of the spindle D in any desired position.

What I claim as my invention is—

1. A measuring-tool consisting of two parallel arms, one of which carries an adjustable spindle, fitted to move in two directions at right angles to each other, substantially as described.

2. A measuring-tool consisting of two parallel arms, through one of which arms a longitudinal slot is made, through which slot a spindle passes at right angles to the surface of the said arm.

3. A measuring-tool consisting of two parallel arms, one arm being longer than the other, and through which long arm a slot is made to receive a spindle which passes through it at right angles to the surface of the arm and within which slot the said spindle is adjustable.

4. Two parallel arms A B and a slot F, made through the arm A to receive the post E, through which post the spindle D is screwed, in combination with the nut G and spring H, made substantially as and for the purpose specified.

5. Two parallel arms A B, an adjusting-pin I, fitted in the arm B and projecting at right angles to its surface, and the slot F, made in the arm A to receive the post E, through which the spindle D is screwed, in combination with a nut G and spring H.

Toronto, January 8, 1891.

EDWARD BEETON.

In presence of—
CHARLES C. BALDWIN,
JOHN E. CAMERON.