(No Model.)

E. WALKER.

COMBINED SURFACE AND MARKING GAGE.

No. 359,336. Patented Mar. 15, 1887.

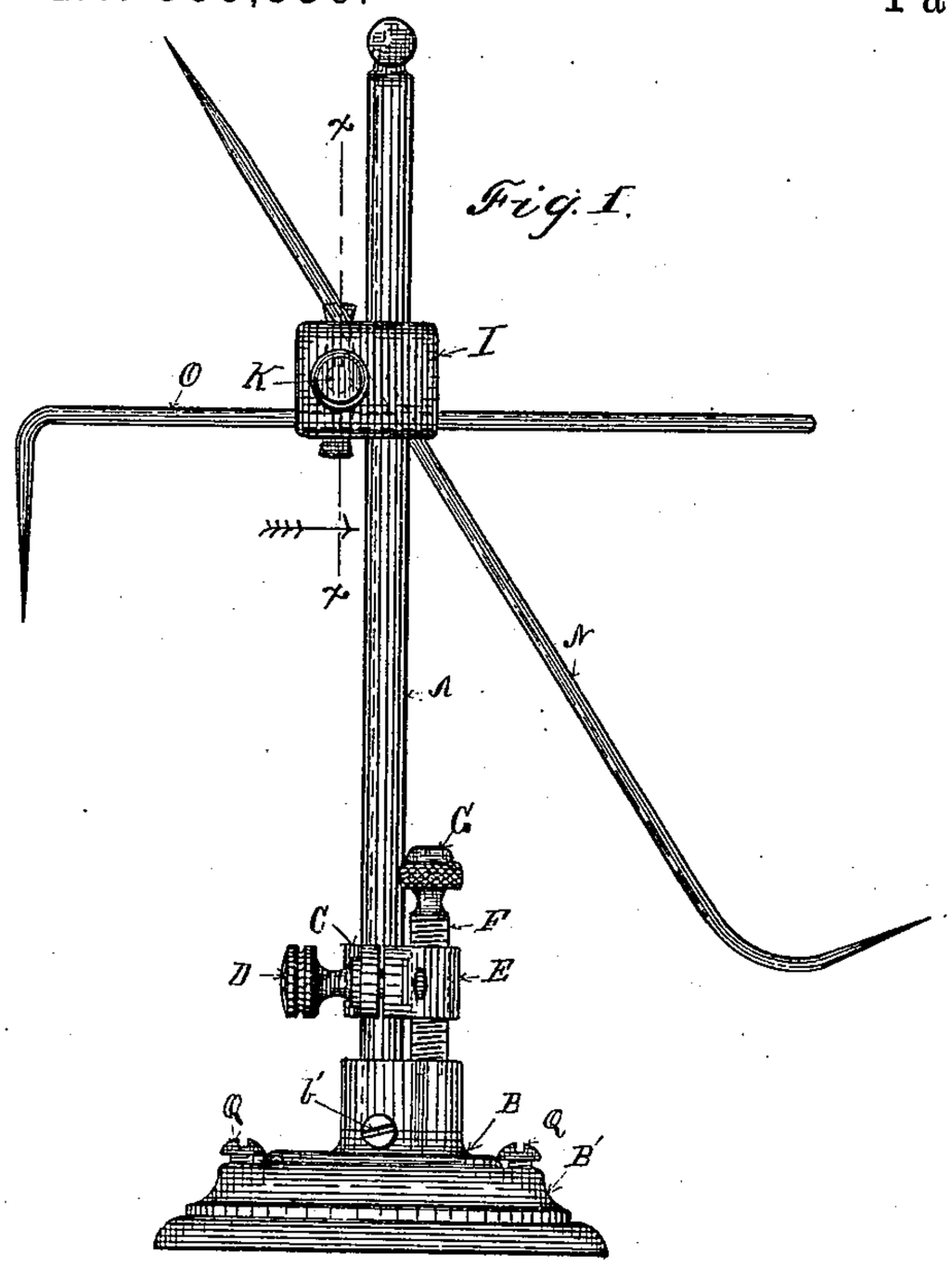

Fig. 1.

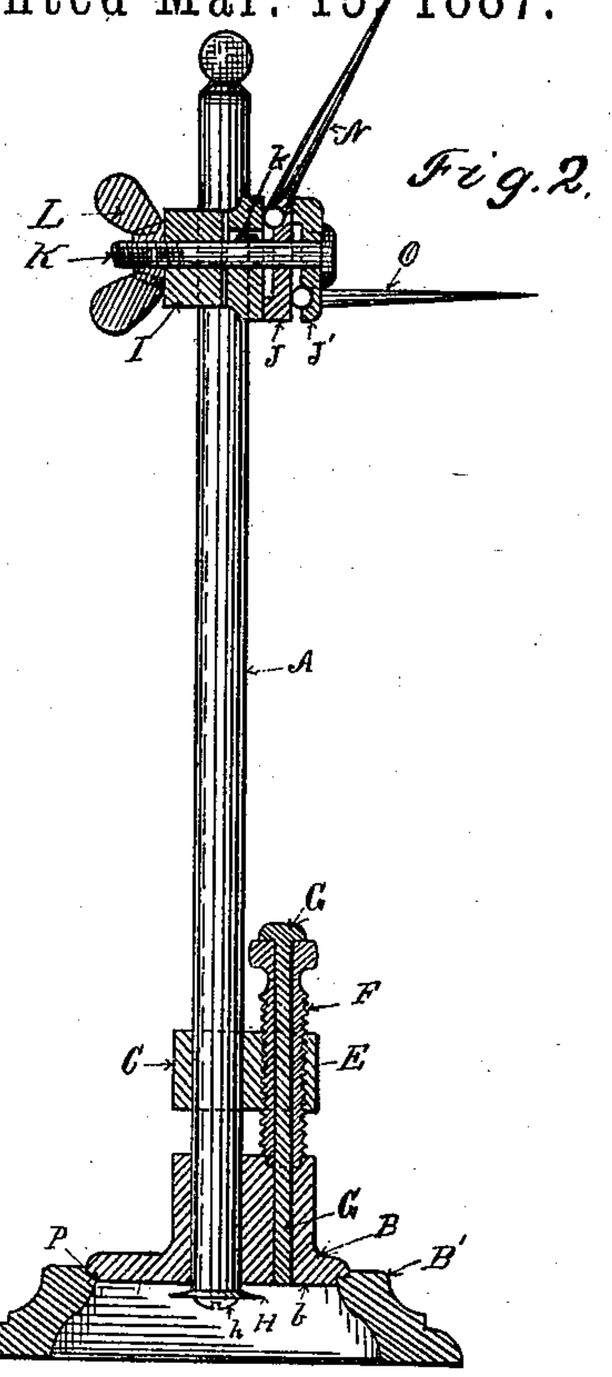

Fig. 2.

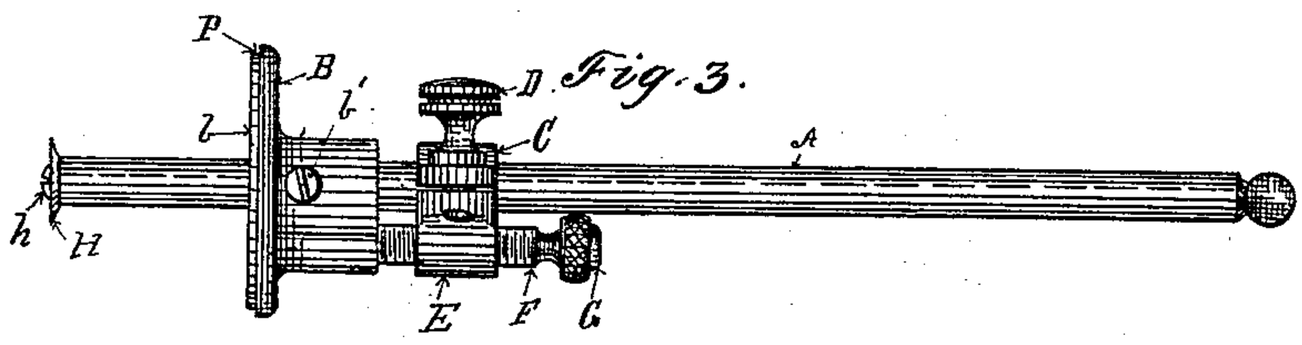

Fig. 3.

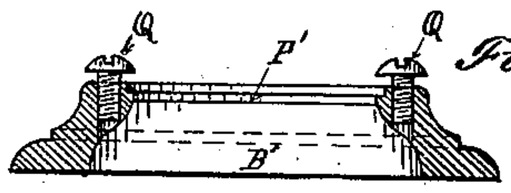

Fig. 5.

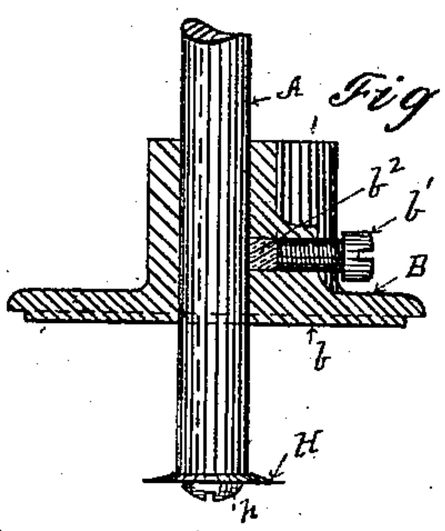

Fig 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

EDWIN WALKER, OF ERIE, PENNSYLVANIA.

COMBINED SURFACE AND MARKING GAGE.

SPECIFICATION forming part of Letters Patent No. 359,336, dated March 15, 1887.

Application filed April 24, 1886. Serial No. 200,080. (No model.)

To all whom it may concern:

Be it known that I, EDWIN WALKER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Gages; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to gages; and it consists in the improvements hereinafter set forth and explained.

My invention is illustrated in the accompanying drawings, in which Figure 1 is a view in elevation of my improved gage. Fig. 2 is a longitudinal section of same on the line *x x* in Fig. 1, looking in the direction of the arrow as to the upper portion, and an opposite section of the lower part through the center of the adjusting-screw. Fig. 3 is a side elevation of same with the surface-gage attachments removed. Fig. 4 is a central section of the gage-head, showing the friction-screw and packing therein. Fig. 5 is a sectional view of the supplementary surface-gage head.

Like letters refer to like parts in all the figures.

In the construction of my improved gage, the stem A is constructed of a round rod of metal, and is provided with a sliding head, B. This head B is faced off at *b*, and is provided with a friction-screw, *b'*, which operates against a friction-block of leather or other yielding substance, b^2, which is pressed down against the stem A by the screw *b'* sufficiently to cause a slight friction in moving the head B upon the rod A. Above the head B, I place upon the stem A a split sleeve or collar, C, which is adapted to slide upon the stem A and be clamped securely thereto at any point by means of the thumb-screw D. Upon the side of this sleeve or collar C is a projecting lug, E, through which a thread is cut parallel to the stem A, in which I place a hollow adjusting-screw, F. Through the center of this screw F, I place a guide pin or rivet, G, which passes through the entire length of the screw F and into the head B, (see Fig. 2,) where it is fastened, thereby securing the screw F firmly to the head B, so that the turning of the screw F tends to move the head B to or from the sleeve or collar C, as may be desired, whereby the head B may be adjusted to the smallest fraction of an inch desired.

On the end of the stem A, next to the face *b* of the head B, I secure a circular cutter, H, by means of a screw, *h*, this cutter being sharpened around its entire periphery. I also place on the stem A, above the split sleeve or collar C, a second split sleeve or collar, I. On one side of this split sleeve I place two washers, J J'. Through these washers J J' and the split sleeve I, I place a bolt, K, which is provided with a spline, *k*, which operates in a groove in the split sleeve I, to prevent the bolt K from turning therein. This bolt K is provided with a thumb-nut, L, by means whereof the split sleeve I is securely clamped to the stem A, and at the same time the washers J J' are clamped thereto. Between the washer J and the side of the sleeve I, I place an arm, N, and between the washers J and J', I place another arm, O. These arms may be bent at their outer ends and sharpened, as shown in Fig. 1, or may be made straight, as desired, and adapted to be swung around the axis of the bolt K and clamped fast at any desired angle for use as surface-gages. This construction also enables the operator to detach the collar I, with the arms N and O clamped thereto, from the stem A, and use them as a compass or as a tram, as desired.

When the tool is to be used as a surface-gage, I place upon the head B a supplementary head, B', (shown in section in Fig. 5,) the head B being provided with a shoulder, P, which fits into the recess P' in the supplementary head B', this supplementary head being secured in place by means of screws Q Q, which are tightened down upon the back of the head B, as illustrated in Fig. 1, the object of this supplementary head B' being to give a larger face for the gage to stand upright upon when used as a surface-gage. When, however, the gage is to be used as a scratch-gage, the supplementary head B' and the

split collar I and its attachments are removed, leaving the tool ready for use for such purpose in the shape shown in Fig. 3.

It is obvious to those skilled in the art to which my improved tool appertains that with slight adjustment it operates both as a scratch and surface gage, which can be adjusted by the operator to the fraction of an inch to suit the work being done.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a gage, a stem having a circular cutter on one end thereof, with a sliding head provided with a friction-cushion and friction-screw, a split sleeve provided with a screw adapted to clamp the same upon said stem, and a hollow adjusting-screw operating in a lug on the side of said split sleeve, and a guide rod or rivet passing through said screw into the back of said sliding head, substantially as and for the purpose set forth.

2. In a gage, a stem having a sliding head and a split clamping-sleeve thereon, connected together by an adjusting-screw, in combination with a movable split sleeve on said stem provided with clamping-screw and washers adapted to clamp surface-gage arms thereto, substantially as and for the purpose set forth.

3. In a gage, a movable split sleeve adapted to be clamped to the stem of the gage, having two or more washers and two or more surface-gage arms on one side thereof, with a clamping-bolt passing through said washers and said split sleeve, having a spline thereon operating in said split sleeve, and a thumb-nut for tightening up the same, substantially as and for the purpose set forth.

4. In a gage, a movable head on the stem of the gage capable of adjustment, in combination with a supplementary removable head fitting upon the periphery thereof, substantially as and for the purpose set forth.

5. In a gage, the stem A, provided with a split sleeve, C, sliding head B, and adjusting-screw F, in combination with the supplementary head B′, the split sleeve I, provided with washers J J′, arms N O, clamping-bolt K, and thumb-nut L, substantially as and for the purpose set forth.

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

EDWIN WALKER.

Witnesses:
C. SWALLEY,
F. A. SAWDEY.